MEETING OF THE GENERAL

GOVERNMENT RETIREMENT BOARD

September 10, 2020

A Regular meeting of the General Government Retirement Board was held on **September 10, 2020 at 5:00 p.m.** in the City Council Chambers at City Hall, Bristol, CT. Members present: Chairman Tom Barnes, Jr., Vice Chairman David Preleski arriving at 5:05 p.m. Comptroller Diane M. Waldron, Commissioners, David Butkus, Orlando Calfe, Peter Dauphinais leaving at 6:00 p.m. after all votes were taken, Thomas DeNoto arriving at 5:10 p.m. Paul Keegan, Rose Parenti, Frank Rossi and William Veits leaving at 5:30 after all votes were taken. Absent Mayor Ellen Zoppo Sassu (Note: Commissioner Orlando Calfe via Web-Ex).

1. **Call to Order.**

The meeting was called to order at 5:00 p.m by Chairman Tom Barnes, Jr.

2. **Item 3 - Minutes for the Regular meeting of August 13, 2020 were approved.**

A motion was made by Commissioner Keegan and seconded by Commissioner Veits and it was unanimously voted to:

> "Approve the minutes of the General Government Retirement Board meeting of August 13, 2020 and place on file."

3. **Item 4 -Treasurer's report August 2020.**

A motion was made by Commissioner Dauphinais and seconded by Commissioner Veits and it was unanimously voted to:

> "Accept the Treasurer's report for August and place it on file."

4. **Item 5 –Consideration of a request for Normal Retirement from Nancy Grover Library Local 233 effective August 21, 2020.**

A motion was made by Comptroller Waldron and seconded by Commissioner Dauphinais and it was unanimously voted to:

> "Approve the request for the Normal Retirement from Nancy Grover Library Local 233 effective August 21, 2020 with an annual pension amount of $36,984.50 or $3,082.04 monthly."

5. **Item 6 – Consideration of a request for Normal Retirement from Paula Brault Board of Education Local 2267 effective July 29, 2020.**

A motion was made by Comptroller Waldron and seconded by Commissioner Keegan and it was unanimously voted to:

> "Approve the request for the Normal Retirement from Paula Brault Board of Education Local 2267 effective July 29, 2020 with an annual pension amount of $25,358.55 or $2,113.21 monthly."

6. **Item 7 – Consideration of a request for Normal Retirement from Noreen Rulkowski Board of Education Local 2267 effective June 18, 2020.**

A motion was made by Commissioner Veits and seconded by Commissioner Keegan and it was unanimously voted to:

"Approve the request for the Normal Retirement from Noreen Rulkowski Board of Education Local 2267 effective June 18, 2020 with an annual pension amount of $16,251.84 or $1,354.32 monthly."

7. Item 8 – Consideration of a request to approve the Normal Retirement from Kenneth Marek Fire Department Local 773 effective August 17, 2020.

A motion was made by Commissioner Veits and seconded by Commissioner Butkus and it was unanimously voted to:

"Approve the request for the Normal Retirement from Kenneth Marek Fire Department Local 772 effective August 17, 2020 with an annual pension amount of $61,209.64 or $2,347.76 bi-weekly."

8. Item 9 – Consideration of a request to approve a Deferred Retirement Option Pension (DROP) for Edward Scott England Fire Department Local 773 effective July 1, 2022.

A motion was made by Commissioner Dauphinais and seconded by Commissioner Butkus and it was unanimously voted to:

"Approve the request for a Deferred Retirement Option Pension (DROP) for Edward Scott England Fire Department Local 773 effective July 1, 2022 with an annual pension amount of $68,471.13 or $2,626.30 bi-weekly."

9. Item 10 – Consideration of a request to approve a Deferred Retirement Option Pension (DROP) for Paul Maghini Fire Department Local 773 effective July 1, 2022.

A motion was made by Commissioner Dauphinais and seconded by Commissioner Butkus and it was unanimously voted to:

"Approve the request for a Deferred Retirement Option Pension (DROP) for Paul Maghini Fire Department Local 773 effective July 1, 2022 with an annual pension amount of $55,505.79 or $2,129.00 bi-weekly."

10. Item 11 – Consideration of a request to approve Deferred Retirement Option Pension (DROP) for William Mason Fire Department Local 773 effective July 1, 2022.

A motion was made by Commissioner Keegan and seconded by Commissioner Butkus and it was unanimously voted to:

"Approve the request for a Deferred Retirement Option Pension (DROP) for William Mason Fire Department Local 773 effective July 1, 2022 with an annual pension amount of 61,209.64 or $2,347.76 bi-weekly."

11. Item 12 – Consideration of a request to approve Deferred Retirement Option Pension (DROP) for Mark McCarthy Fire Department Local 773 effective July 1, 2022.

A motion was made by Commissioner Keegan and seconded by Commissioner Butkus and it was unanimously voted to:

"Approve the request for a Deferred Retirement Option Pension (DROP) for Mark McCarthy Fire Department Local 773 effective July 1, 2022 with an annual pension amount of $76,561.37 or $2,936.60 bi-weekly."

12. Item 13 - Consideration of a request to approve Deferred Retirement Option Pension (DROP) for Kevin McCauley Fire Department Local 773 effective July 1, 2022.

A motion was made by Commissioner Parenti and seconded by Commissioner Butkus and it was unanimously voted to:

"Approve the request for a Deferred Retirement Option Pension (DROP) for Kevin McCauley Fire Department Local 773 effective July 1, 2022 with an annual pension amount of $51,972.38 or $1,993.46 bi-weekly."

13. Item 14 – Consideration of a request to approve Deferred Retirement Option Pension (DROP) for Jeffrey Neumann Fire Department Local 773 effective July 1, 2022.

A motion was made by Commissioner Parenti and seconded by Commissioner Butkus and it was unanimously voted to:

"Approve the request for a Deferred Retirement Option Pension (DROP) for Jeffrey Neumann Fire Department Local 773 effective July 1, 2022 with an annual pension amount of $68,471.13 or $2,626.30 bi-weekly."

14. Item 15 – Consideration of a request to approve Deferred Retirement Option Pension (DROP) for Richard Norbut Fire Department Local 773 effective July 1, 2022.

A motion was made by Commissioner Butkus and seconded by Commissioner Veits and it was unanimously voted to:

"Approve the request for a Deferred Retirement Option Pension (DROP) for Richard Norbut Fire Department Local 773 effective July 1, 2022 with an annual pension amount of $61,023.77 or $2,340.64 bi-weekly."

15. Item 16 – Consideration of a request to approve Deferred Retirement Option Pension (DROP) for Alan Pastyrnak Fire Department Local 773 effective July 1, 2022.

A motion was made by Commissioner Butkus and seconded by Commissioner Veits and it was unanimously voted to:

"Approve the request for a Deferred Retirement Option Pension (DROP) for Alan Pastyrnak Fire Department Local 773 effective July 1, 2022 with an annual pension amount of $61,209.64 or $2,347.76 bi-weekly."

16. Item 17 – Consideration of a request to approve Deferred Retirement Option Pension (DROP) for Robert Poggio Fire Department Local 773 effective July 1, 2022.

A motion was made by Commissioner Rossi and seconded by Commissioner Butkus and it was unanimously voted to:

"Approve the request for a Deferred Retirement Option Pension (DROP) for Robert Poggio Fire Department Local 773 effective July 1, 2022 with an annual pension amount of $76,561.37 or $2,936.60 bi-weekly."

17. Item 18 – Consideration of a request to approve Deferred Retirement Option Pension (DROP) for George Rehberg Fire Department Local 773 effective December 19, 2021.

A motion was made by Commissioner Rossi and seconded by Commissioner Butkus and it was unanimously voted to:

"Approve the request for a Deferred Retirement Option Pension (DROP) for George Rehberg Fire Department Local 773 effective December 19, 2021 with an annual pension amount of $54,020.48 or $2,072.02 bi-weekly."

18. Item 19 – Consideration of a request to approve Deferred Retirement Option Pension (DROP) for John Ziogas Fire Department Local 773 effective April 2, 2021.

A motion was made by Comptroller Waldron and seconded by Commissioner Butkus and it was unanimously voted to:

"Approve the request for a Deferred Retirement Option Pension (DROP) for John Ziogas Fire Department Local 773 effective April 2, 2021 with an annual pension amount of $76,561.37 or $2,936.60 bi-weekly."

19. Item 20 – Investment Review by Beirne Wealth Consulting, LLC.

- **General Retirement Fund**
- **Discussion of Investment Advisor and Manager Fees**

Investment Review

John Beirne reviewed a few charts relative to the economy, market and risk. He referenced an article on Long Term Investing in a World Marked by Pandemic that expected returns from cash and bonds, corporate and governmental, will be minimal due to interest rates hitting rock bottom and that investors will need to seek other alternatives to improve long term returns. It is expected that returns will not keep up with inflation. Emerging market debt is a little more attractive. He also referenced in the article that the traditional 60/40 split will not generate the returns it has in the past due to the low returns on bonds. He also referenced that to increase long term returns endowment style investing, that incorporates more private equity, real assets and absolute-return strategies would be a good alternative investment strategy.

John Oliver Beirne reviewed recent market performance as it relates to the City's Plan. He reviewed the June 30th report which is still pending one unpriced asset (Corrum Capital Real Assets, LP). The fund earned 1.96% for the fiscal year, compared to a Policy Index blend of 3.84% and the 60/40 Index of 5.29%. As of August 31st with approximately 20% of the portfolio unpriced at 8/31, the fund is earning a Fiscal YTD return of 7.45% compared to a Policy Index of 7.46% and a 60/40 Index of 7.25%.

Discussion of Investment Advisor and Manager Fees:

John Oliver addressed the Investment Advisor and Manager Fees referencing a handout he presented to the Board. He indicated based on the 2012 RFP process the BWC fee was 16.5 BPS which is a wrapped fee that includes the portfolio service model, Custodian fees which was approximately 5 BPS but is currently approximately 2.5 BPS, the Advent reporting fee of 0.5 BPS, an annual COLA adjustment and insurance. He referenced the insurance the City requires is much greater than insurance required for many of their other clients. Currently the Insurance is running at about 1.3 BPS.

Comptroller Waldron asked if the custodian services could be unbundled and put out to RFP to get a more competitive rate. John Oliver indicated this could be done. Chairman Barnes asked if, as part of an RFP process for Custodian services, could a securities lending program be incorporated. John Oliver indicated this could be done and could potentially generate additional revenue to the plan.

Commissioner Rossi questioned the COLA. John Oliver responded that there is an annual increase to their fee based on the CPI. Comptroller Waldron added that the current fee as of January 1, 2020 is 18.1 BPS. John Oliver asked if the City is provided a breakdown of the fees and Comptroller Waldron responded that there is no invoice or notification of the quarterly fees or when the fees increase. She has to ask for the calculation. Richard DeFrancesco at Beirne Wealth provides a calculation based on asset values but this is only provided when requested for audit purposes. A breakdown by custodian, advent or insurance costs is not provided.

John Oliver went on to explain that the returns the plan is experiencing is net of manager fees. He also noted that there are a number of capital calls upcoming in the portfolio. Chairman Barnes asked about credit and John Oliver indicated Grey Wolf will make 4 to 5 times their money in credit.

He went on to add that Beirne Wealth Consulting is interested in a standard of care above and beyond what most firms would provide, pointing out that Beirne provides reporting on a monthly basis whereas most firms report quarterly. He mentioned how proactive the City Retirement Board has been with the funds and the impact this has had on the fund's performance. It took approximately seven years to build the Portfolio out with approximately 10% of the portfolio in real estate. They took a proactive approach to de-risking of bonds in the last ten years so the portfolio added a lot of value. Beirne has negotiated every fee down from their managers. Traditional investment firms would use a 60 Equity and /40 High Quality Fixed Income investment strategy. Fixed Income does not pay good returns. Commissioner Rossi asked if comparison of other municipalities would be available. John Oliver will send one to the Board.

Commissioner DeNoto asked if the only way to readdress custodian/insurance fees would be to send the entire bundle out to RFP or is it possible to unbundle these two components? If Beirne unwrapped cost structures they could save the City money.

The Board discussed the insurance component of the fees that Beirne has said is a high requirement. Comptroller Waldron will speak to Roger Rousseau about the insurance requirements and get comparisons to what other plans require for their advisory services.

Comptroller Waldron commented that when there is an escalation in fees it should be presented to the Board in the interest of transparency. Currently there is no fee statement provided or notification when the fees increase. In addition a breakdown of the quarterly fees should be made part of the Quarterly Report provided by Beirne Wealth Consulting.

John Oliver said we all want to be sensitive to costs – what did we pay vs. what did we get for it. How has the City done compared to the average public fund which is about 70% funded vs. City's fund which is overfunded. He thinks the results are there. He said they are not trying to make money on what the custodian does and would prefer if that money could go back into the pension plan. Chairman Barnes mentioned that John Oliver spoke to him back in December or January and mentioned they would like to discuss lowering their fees as they did in Milford and then Covid hit.

20. Item 21 – Unfinished Business:

After much discussion Bierne Wealth Consulting representatives left.

Chairman Barnes reviewed the process the Board has done in the past with regard to Request for Proposals including how important the interview process is and that there was not much participation from this Board. He would want more participation from the entire Retirement Board with this process as it moves forward. The Board continued its discussion on the RFP process. Commissioner Rossi said that even if we don't go out to bid for advisor services at this time – other components can be sent out to RFP and that service providers could tighten their belts.

A motion was made by Commissioner DeNoto and Seconded by Commissioner Butkus and it was unanimously voted to:

"Engage Bierne Wealth Consulting, LLC in a discussion to re-negotiate their fees; to unbundle certain services starting with custodian services; and, revisit the insurance requirements, all in the interest of realizing some savings."

21. Item 22 – No other business to come before meeting.

22. Item 23 – Adjournment.

At 6:50 p.m. a motion was made by Commissioner Keegani and seconded by Comptroller Waldron and it was unanimously voted to: "Adjourn."

Diane M. Waldron

Diane M. Waldron
Comptroller and Secretary, Retirement Board

City of Bristol Employee Pension Fund

Quarter Ended 6/30/20

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Market Performance

As of June 30, 2020

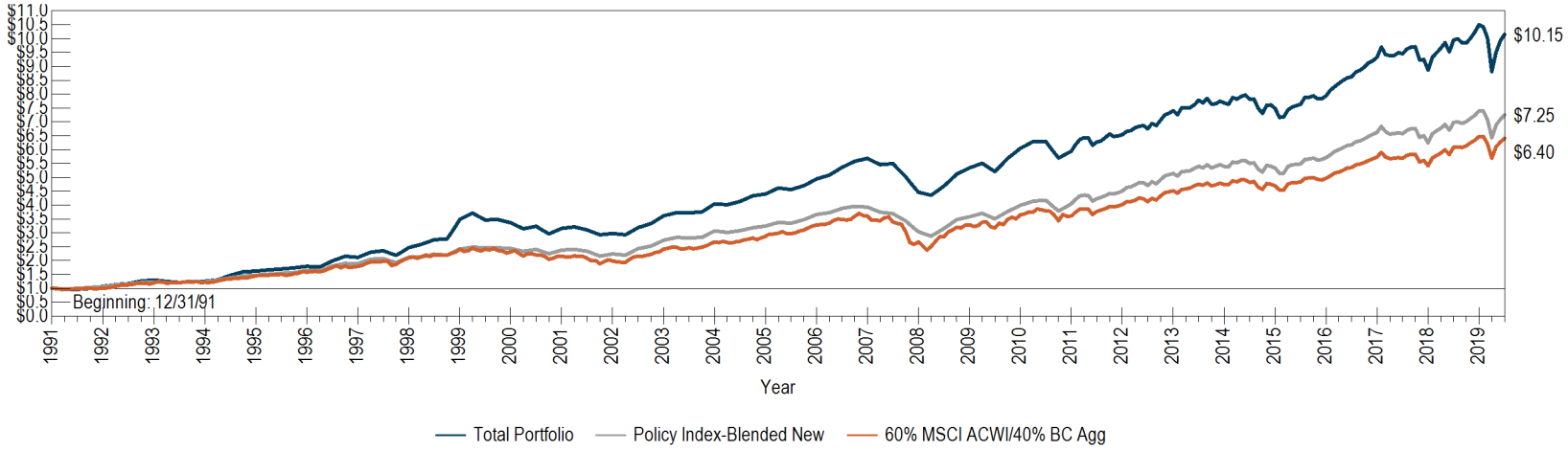
Name	Last 3 Months	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	15 Yrs
US Equity								
Russell 3000	22.0	-3.5	6.5	10.0	10.0	11.7	13.7	8.8
S&P 500	20.5	-3.1	7.5	10.7	10.7	12.1	14.0	8.8
Russell 1000	21.8	-2.8	7.5	10.6	10.5	12.0	14.0	8.9
Russell 1000 Growth	27.8	9.8	23.3	19.0	15.9	16.6	17.2	11.3
Russell 1000 Value	14.3	-16.3	-8.8	1.8	4.6	7.1	10.4	6.2
Russell MidCap	24.6	-9.1	-2.2	5.8	6.8	9.4	12.3	8.5
Russell 2000	25.4	-13.0	-6.6	2.0	4.3	7.2	10.5	7.0
Russell 2000 Growth	30.6	-3.1	3.5	7.9	6.9	10.0	12.9	8.8
Russell 2000 Value	18.9	-23.5	-17.5	-4.3	1.3	4.0	7.8	5.0
International Equity								
MSCI ACWI	19.2	-6.3	2.1	6.1	6.5	7.8	9.2	6.4
MSCI World ex USA	15.3	-11.5	-5.4	0.8	2.0	3.8	5.4	4.1
MSCI EAFE	14.9	-11.3	-5.1	0.8	2.1	3.9	5.7	4.1
MSCI Emerging Markets	18.1	-9.8	-3.4	1.9	2.9	3.2	3.3	6.3
Fixed Income								
91 Day T-Bills	0.0	0.4	1.3	1.7	1.1	0.8	0.6	1.2
BBgBarc US Aggregate TR	2.9	6.1	8.7	5.3	4.3	4.0	3.8	4.4
BBgBarc US Govt/Credit TR	3.7	7.2	10.0	5.9	4.7	4.2	4.1	4.5
BBgBarc US Municipal TR	2.7	2.1	4.4	4.2	3.9	4.1	4.2	4.3
BBgBarc US High Yield TR	10.2	-3.8	0.0	3.3	4.8	5.0	6.7	6.8
FTSE WGBI TR	2.0	4.1	4.6	4.0	3.7	2.2	2.4	3.3
FTSE WGBI ex US TR	3.0	1.0	0.9	2.9	3.3	1.5	1.8	2.9
Real Estate								
FTSE NAREIT All REIT	14.0	-15.0	-8.4	2.7	6.1	6.8	10.1	6.3
NCREIF Property Index	-1.0	-0.3	2.7	5.4	6.8	8.3	9.7	7.7
Alternatives								
HFRI Fund of Funds Composite Index	7.9	-1.6	0.5	2.3	1.5	2.7	2.8	2.6
Inflation								
Consumer Price Index	-0.1	0.3	0.6	1.7	1.6	1.4	1.7	1.9

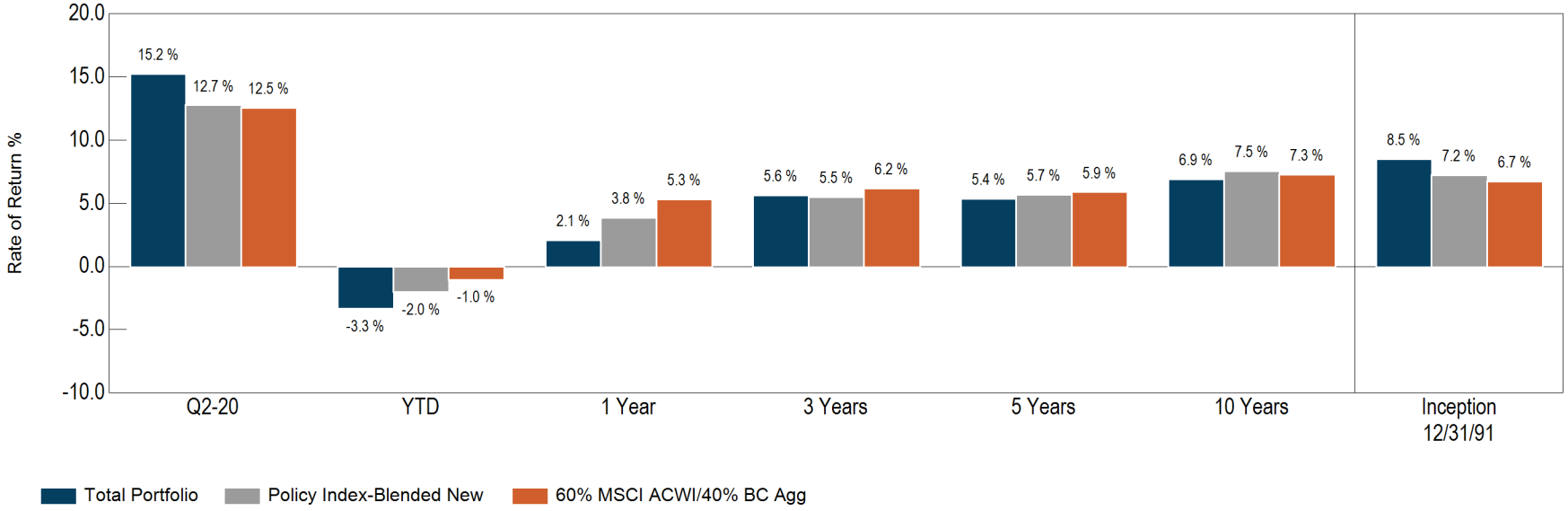
Total Portfolio

Total Portfolio Information

As of June 30, 2020

Growth of a Dollar





Total Portfolio

Run Date: August 12, 2020

Performance Summary

As of June 30, 2020

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	25 Yrs (%)	Inception (%)	Inception Date
Total Portfolio	**641,029,270**	**100.00**	**100.00**	**15.20**	**-3.31**	**2.06**	**5.60**	**5.36**	**6.90**	**8.04**	**8.47**	**Dec-91**
Policy Index-Blended New				*12.74*	*-1.99*	*3.84*	*5.49*	*5.67*	*7.53*	*6.87*	*7.20*	*Dec-91*
Over/Under				2.46	-1.32	-1.78	0.11	-0.31	-0.63	1.17	1.27	
60% MSCI ACWI/40% BC Agg				*12.52*	*-1.01*	*5.29*	*6.16*	*5.87*	*7.26*	*6.48*	*6.73*	*Dec-91*
Credit	**128,962,020**	**20.12**	**25.00**	**9.94**	**-8.35**	**-7.63**	**--**	**--**	**--**	**--**	**-0.33**	**Dec-18**
BBgBarc US Aggregate TR				*2.90*	*6.13*	*8.74*	*5.32*	*4.30*	*3.82*	*5.36*	*10.01*	*Dec-18*
Over/Under				7.04	-14.48	-16.37					-10.34	
High Quality Credit	**93,901,637**	**14.65**	**15.00**	**8.50**	**-3.08**	**-2.27**	**--**	**--**	**--**	**--**	**4.01**	**Dec-18**
BBgBarc US Aggregate TR				*2.90*	*6.13*	*8.74*	*5.32*	*4.30*	*3.82*	*5.36*	*10.01*	*Dec-18*
Over/Under				5.60	-9.21	-11.01					-6.00	
Boyd Watterson Fixed Income	36,440,470	5.68		3.92	5.93	8.79	5.80	4.49	4.13	5.68	6.41	Mar-90
BBgBarc US Aggregate TR				*2.90*	*6.13*	*8.74*	*5.32*	*4.30*	*3.82*	*5.36*	*6.10*	*Mar-90*
Over/Under				1.02	-0.20	0.05	0.48	0.19	0.31	0.32	0.31	
GoldenTree High Grade Floating Rate Fund, Ltd.	31,177,577	4.86		8.84	-1.97	0.06	--	--	--	--	1.61	Jan-18
BBgBarc US Aggregate Float Adjusted TR				*3.02*	*6.30*	*8.92*	*5.39*	*4.37*	*3.87*	--	*6.70*	*Jan-18*
Over/Under				5.82	-8.27	-8.86					-5.09	
EnTrust Structured Income II-A	26,283,590	4.10		15.44	-13.24	-14.83	-0.68	--	--	--	-0.68	Jul-17
BBgBarc US Aggregate TR				*2.90*	*6.13*	*8.74*	*5.32*	*4.30*	*3.82*	*5.36*	*5.32*	*Jul-17*
Over/Under				12.54	-19.37	-23.57	-6.00				-6.00	
Multi-Credit	**35,060,382**	**5.47**	**10.00**	**14.00**	**-19.98**	**-19.41**	**--**	**--**	**--**	**--**	**-10.04**	**Dec-18**
BBgBarc US High Yield TR				*10.18*	*-3.80*	*0.03*	*3.33*	*4.79*	*6.68*	*6.90*	*6.54*	*Dec-18*
Over/Under				3.82	-16.18	-19.44					-16.58	
OCO Opportunities Offshore Fund, Ltd.	9,177,327	1.43		15.03	-8.37	-8.21	-8.33	-2.93	--	--	-0.33	Jan-14
BBgBarc US High Yield TR				*10.18*	*-3.80*	*0.03*	*3.33*	*4.79*	*6.68*	*6.90*	*4.40*	*Jan-14*
Over/Under				4.85	-4.57	-8.24	-11.66	-7.72			-4.73	
Prytania Athena Fund	10,657,129	1.66		16.67	-30.60	-30.58	-6.14	-1.49	--	--	-0.47	Feb-14
BBgBarc Global High Yield TR				*12.19*	*-4.66*	*-1.98*	*2.22*	*4.40*	*6.43*	*7.93*	*3.39*	*Feb-14*
Over/Under				4.48	-25.94	-28.60	-8.36	-5.89			-3.86	
EnTrust Structured Income Fund	8,084,998	1.26		12.36	-23.32	-22.76	-1.71	0.06	--	--	1.86	Mar-13
BBgBarc US Aggregate TR				*2.90*	*6.13*	*8.74*	*5.32*	*4.30*	*3.82*	*5.36*	*3.46*	*Mar-13*
Over/Under				9.46	-29.45	-31.50	-7.03	-4.24			-1.60	
Beach Point TR Offshore Fund II	7,140,928	1.11		10.80	-8.94	-6.31	0.10	1.86	--	--	4.46	Dec-11
BBgBarc US High Yield TR				*10.18*	*-3.80*	*0.03*	*3.33*	*4.79*	*6.68*	*6.90*	*6.08*	*Dec-11*
Over/Under				0.62	-5.14	-6.34	-3.23	-2.93			-1.62	

Total Portfolio

Run Date: August 12, 2020

Performance Summary

As of June 30, 2020

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	25 Yrs (%)	Inception (%)	Inception Date
Equity	**362,059,795**	**56.48**	**55.00**	**25.20**	**-1.04**	**8.16**	**--**	**--**	**--**	**--**	**16.29**	**Dec-18**
MSCI ACWI				*19.22*	*-6.25*	*2.11*	*6.14*	*6.46*	*9.16*	*6.69*	*12.10*	*Dec-18*
Over/Under				5.98	5.21	6.05					4.19	
Public Equity	**351,620,369**	**54.85**	**43.00**	**26.07**	**-0.80**	**8.69**	**--**	**--**	**--**	**--**	**16.66**	**Dec-18**
MSCI ACWI				*19.22*	*-6.25*	*2.11*	*6.14*	*6.46*	*9.16*	*6.69*	*12.10*	*Dec-18*
Over/Under				6.85	5.45	6.58					4.56	
Neuberger Berman Large Cap Growth	116,620,986	18.19		30.73	15.93	29.17	21.97	18.20	16.30	12.33	14.39	Jan-79
Russell 1000 Growth				*27.84*	*9.81*	*23.28*	*18.99*	*15.89*	*17.23*	*9.74*	*11.65*	*Jan-79*
Over/Under				2.89	6.12	5.89	2.98	2.31	-0.93	2.59	2.74	
iShares Russell 1000 Value ETF(IWD)	21,609,486	3.37		14.23	-16.32	-8.88	--	--	--	--	-1.38	Jan-19
Russell 1000 Value				*14.29*	*-16.26*	*-8.84*	*1.82*	*4.64*	*10.41*	*8.52*	*-1.19*	*Jan-19*
Over/Under				-0.06	-0.06	-0.04					-0.19	
Columbia Dividend Income	10,280,458	1.60		13.87	-8.36	0.88	--	--	--	--	1.17	Apr-19
Russell 1000 Value				*14.29*	*-16.26*	*-8.84*	*1.82*	*4.64*	*10.41*	*8.52*	*-7.40*	*Apr-19*
Over/Under				-0.42	7.90	9.72					8.57	
Eagle Equity	15,760,478	2.46		18.90	-9.89	-1.88	--	--	--	--	3.61	Mar-19
Russell 1000 Value				*14.29*	*-16.26*	*-8.84*	*1.82*	*4.64*	*10.41*	*8.52*	*-4.29*	*Mar-19*
Over/Under				4.61	6.37	6.96					7.90	
Robeco LCV	39,624,802	6.18		16.46	-17.38	-9.23	1.35	3.89	--	--	6.14	Sep-13
Russell 1000 Value				*14.29*	*-16.26*	*-8.84*	*1.82*	*4.64*	*10.41*	*8.52*	*6.77*	*Sep-13*
Over/Under				2.17	-1.12	-0.39	-0.47	-0.75			-0.63	
Miller Opportunity Trust Class I(LMNOX)	5,275,947	0.82		47.61	-9.88	5.15	--	--	--	--	5.10	Mar-19
Russell 1000 Value				*14.29*	*-16.26*	*-8.84*	*1.82*	*4.64*	*10.41*	*8.52*	*-4.29*	*Mar-19*
Over/Under				33.32	6.38	13.99					9.39	
Fiera SMID Growth	41,781,418	6.52		33.04	2.65	7.90	12.57	8.26	--	--	8.80	Oct-14
Russell 2500 Growth				*32.87*	*2.02*	*9.21*	*12.10*	*9.57*	*14.45*	*9.14*	*10.46*	*Oct-14*
Over/Under				0.17	0.63	-1.31	0.47	-1.31			-1.66	
Neuberger Berman International	42,921,913	6.70		19.35	-8.56	1.87	2.89	3.79	7.82	--	6.17	Jan-05
MSCI EAFE				*14.88*	*-11.34*	*-5.13*	*0.81*	*2.05*	*5.73*	*4.54*	*4.02*	*Jan-05*
Over/Under				4.47	2.78	7.00	2.08	1.74	2.09		2.15	
Vanguard Developed Mkts Ind(VTMNX)	13,908,942	2.17		17.49	--	--	--	--	--	--	-0.63	Feb-20
FTSE Developed ex North America				*15.66*	*-10.71*	*-4.10*	*1.22*	*2.76*	*6.29*	--	*0.43*	*Feb-20*
Over/Under				1.83							-1.06	
ACA-Eastbay	559,398	0.09		11.83	-29.10	-32.91	-29.69	-18.67	--	--	-11.34	Mar-14

Total Portfolio

Run Date: August 12, 2020

Performance Summary

As of June 30, 2020

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	25 Yrs (%)	Inception (%)	Inception Date
GAMCO Gold	13,822,734	2.16		54.80	24.56	43.17	15.41	15.04	--	--	-2.70	Jan-12
Philadelphia Gold and Silver Index				*63.86*	*21.29*	*54.75*	*17.88*	*16.28*	*-5.19*	--	*-4.59*	*Jan-12*
Over/Under				-9.06	3.27	-11.58	-2.47	-1.24			1.89	
Sprott Asset Management	13,629,221	2.13		67.34	20.52	42.77	12.24	12.53	--	--	-4.57	Jan-12
Philadelphia Gold and Silver Index				*63.86*	*21.29*	*54.75*	*17.88*	*16.28*	*-5.19*	--	*-4.59*	*Jan-12*
Over/Under				3.48	-0.77	-11.98	-5.64	-3.75			0.02	
iShares MSCI Emerging Markets ETF(EEM)	2,336,144	0.36		17.84	-10.36	-4.31	1.20	--	--	--	4.29	Jan-17
MSCI Emerging Markets				*18.08*	*-9.78*	*-3.39*	*1.90*	*2.86*	*3.27*	*5.45*	*5.17*	*Jan-17*
Over/Under				-0.24	-0.58	-0.92	-0.70				-0.88	
Glovista Emerging Markets	13,488,442	2.10		16.57	-10.47	-4.60	0.48	0.79	--	--	0.24	Apr-14
MSCI Emerging Markets				*18.08*	*-9.78*	*-3.39*	*1.90*	*2.86*	*3.27*	*5.45*	*2.44*	*Apr-14*
Over/Under				-1.51	-0.69	-1.21	-1.42	-2.07			-2.20	
Private Equity	**10,439,426**	**1.63**	**5.00**	**-0.52**	**-5.05**	**-9.81**	**--**	**--**	**--**	**--**	**2.02**	**Dec-18**
7.5% Annual Return				*1.82*	*3.68*	*7.50*	*7.50*	*7.50*	*7.50*	*7.50*	*7.50*	*Dec-18*
Over/Under				-2.34	-8.73	-17.31					-5.48	
Arsenal III, LP($15 mill)	6,526,282	1.02		0.00	-0.36	-5.52	--	--	--	--	19.82	Jan-19
Zephyr Peacock India Fund III Limited ($5 million)	2,494,217	0.39		-0.42	-12.74	-16.55	-2.90	0.00	--	--	-1.70	May-12
Zephyr Peacock India Growth Fund US, LP	1,418,927	0.22		-3.00	-3.66	-9.58	--	--	--	--	-12.75	Jul-18
Diversified Equity	**--**	**--**	**7.00**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**Dec-18**
HFRI FOF: Diversified Index				*7.19*	*-1.06*	*0.84*	*2.62*	*1.59*	*2.85*	*4.69*	*4.58*	*Dec-18*
Over/Under												

Total Portfolio

Run Date: August 12, 2020

Performance Summary

As of June 30, 2020

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	25 Yrs (%)	Inception (%)	Inception Date
Alternatives	**124,541,333**	**19.43**	**20.00**	**3.44**	**0.91**	**-1.30**	**--**	**--**	**--**	**--**	**4.31**	**Dec-18**
HFRI Fund of Funds Composite Index				*7.89*	*-1.59*	*0.48*	*2.25*	*1.49*	*2.79*	*4.90*	*4.40*	*Dec-18*
Over/Under				-4.45	2.50	-1.78					-0.09	
Real Estate	**54,140,253**	**8.45**	**12.50**	**1.80**	**2.57**	**6.84**	**--**	**--**	**--**	**--**	**7.49**	**Dec-18**
NCREIF Property Index				*-0.99*	*-0.29*	*2.69*	*5.44*	*6.77*	*9.70*	*9.15*	*4.03*	*Dec-18*
Over/Under				2.79	2.86	4.15					3.46	
Boyd Titanium GSA Fund ($10 million)	37,867,421	5.91		1.85	2.35	6.34	7.56	8.26	--	--	7.49	Sep-13
Boyd Watterson State Govt Fund, LP	11,059,730	1.73		2.51	3.97	11.32	--	--	--	--	8.64	Feb-18
Mountain Lake Real Estate Fund I LP	401,821	0.06		0.00	0.00	-22.07	-0.79	7.55	--	--	8.27	Jun-12
Invesco Realty ($10 million)	483,454	0.08		0.00	-0.43	-4.74	4.52	3.46	9.49	--	9.82	Dec-09
Invesco Mortgage Recovery Fund II, LP($10 million)	3,038,173	0.47		0.00	1.45	1.17	12.49	10.75	--	--	10.13	Mar-15
Heitman Value Partners III, LP($7 million)	1,039,660	0.16		0.00	4.96	15.06	14.04	16.67	--	--	15.99	Apr-15
Lone Star ($10 million)	249,994	0.04		0.00	-14.63	-8.39	-2.18	4.19	--	--	7.71	Jun-11
Commodities	**5,937,826**	**0.93**	**2.50**	**0.00**	**-16.75**	**-20.33**	**--**	**--**	**--**	**--**	**-14.38**	**Dec-18**
Bloomberg Commodity Index TR USD				*5.08*	*-19.40*	*-17.38*	*-6.14*	*-7.69*	*-5.82*	*0.75*	*-9.01*	*Dec-18*
Over/Under				-5.08	2.65	-2.95					-5.37	
Corrum Capital Real Assets, LP ($10 million)	5,937,826	0.93		0.00	-16.75	-20.33	-1.60	0.95	--	--	1.05	Jun-15
Differentiated Return Stream	**64,463,254**	**10.06**	**5.00**	**5.27**	**1.59**	**-14.00**	**--**	**--**	**--**	**--**	**1.94**	**Dec-18**
CPI+2%				*0.37*	*1.32*	*2.66*	*3.75*	*3.58*	*3.72*	*4.16*	*3.77*	*Dec-18*
Over/Under				4.90	0.27	-16.66					-1.83	
Kelly Park Capital	17,092,098	2.67		7.40	0.54	--	--	--	--	--	0.54	Dec-19
Verition International Multi-Strategy Fund, Ltd.	19,723,684	3.08		11.01	16.02	--	--	--	--	--	16.02	Dec-19
Corrum Capital Railcar Partners, LP	5,101,912	0.80		0.00	-25.00	-49.21	--	--	--	--	-26.92	May-18
Entrust Blue Ocean Fund, LP	1,501,262	0.23		0.00	--	--	--	--	--	--	0.00	Apr-20
Longford Capital ($15 million)	6,979,323	1.09		0.00	2.10	-11.63	4.14	11.87	--	--	-2.27	Jul-13
Longford Capital Fund II, LP ($30 million)	12,564,975	1.96		0.00	-1.40	3.54	9.27	--	--	--	-0.80	Nov-16
Longford Capital Fund III, LP($30 million)	1,500,000	0.23		0.00	--	--	--	--	--	--	0.00	Apr-20
Cash	**25,466,123**	**3.97**	**0.00**	**0.00**	**0.25**	**1.10**	**--**	**--**	**--**	**--**	**1.43**	**Dec-18**
91 Day T-Bills				*0.03*	*0.40*	*1.30*	*1.66*	*1.13*	*0.59*	*2.22*	*1.65*	*Dec-18*
Over/Under				-0.03	-0.15	-0.20					-0.22	
Cash Account	25,466,123	3.97		0.00	0.25	1.10	1.37	0.88	--	--	0.59	Dec-11
ICE BofA 91 Days T-Bills TR				*0.02*	*0.60*	*1.63*	*1.77*	*1.19*	*0.64*	*2.38*	*0.73*	*Dec-11*
Over/Under				-0.02	-0.35	-0.53	-0.40	-0.31			-0.14	

Total Portfolio

Run Date: August 12, 2020

Performance Summary

As of June 30, 2020

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	25 Yrs (%)	Inception (%)	Inception Date

- Policy Index-Blended New = MSCI ACWI 55% / BBgBarc US Aggregate TR 25% / HFRI Fund of Funds Composite Index 20%
- 60% MSCI ACWI/40% BC Agg = MSCI ACWI 60% / BBgBarc US Aggregate TR 40%
- 7.5% Annual Return = 0.61
- NCREIF Property Index = NCREIF Property Index
- CPI+2% = Consumer Price Index + 0.17

Prior to 1/1/2019 the Policy Index Blended New consists of 15% Russell 1000 Growth, 15% Russell 1000 Value, 5% Russell MidCap, 13.6% MSCI EAFE, 7.5% MSCI Emerging Markets, 21.3% BC US Aggregate, 7.6% BofA HY BB-B Rated Constrained Index, 10% HFRX Global Hedge Fund Index, 5% Private Equity Actual.

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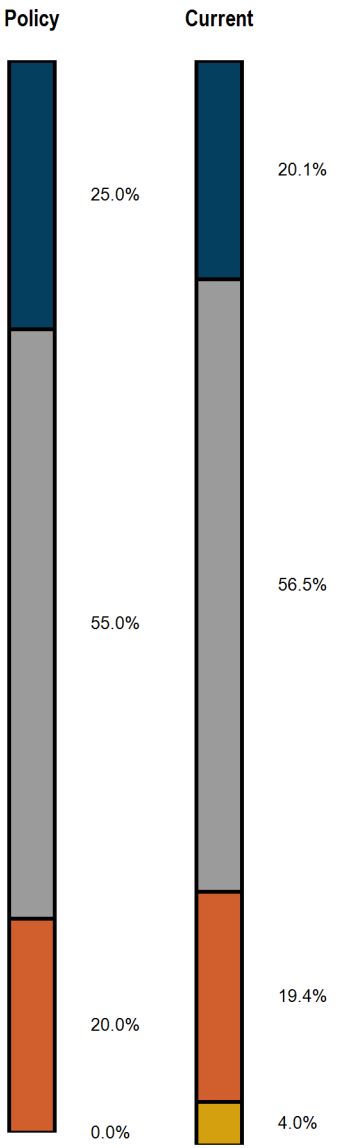
Total Portfolio

Asset Allocation vs. Target Policy

As of June 30, 2020

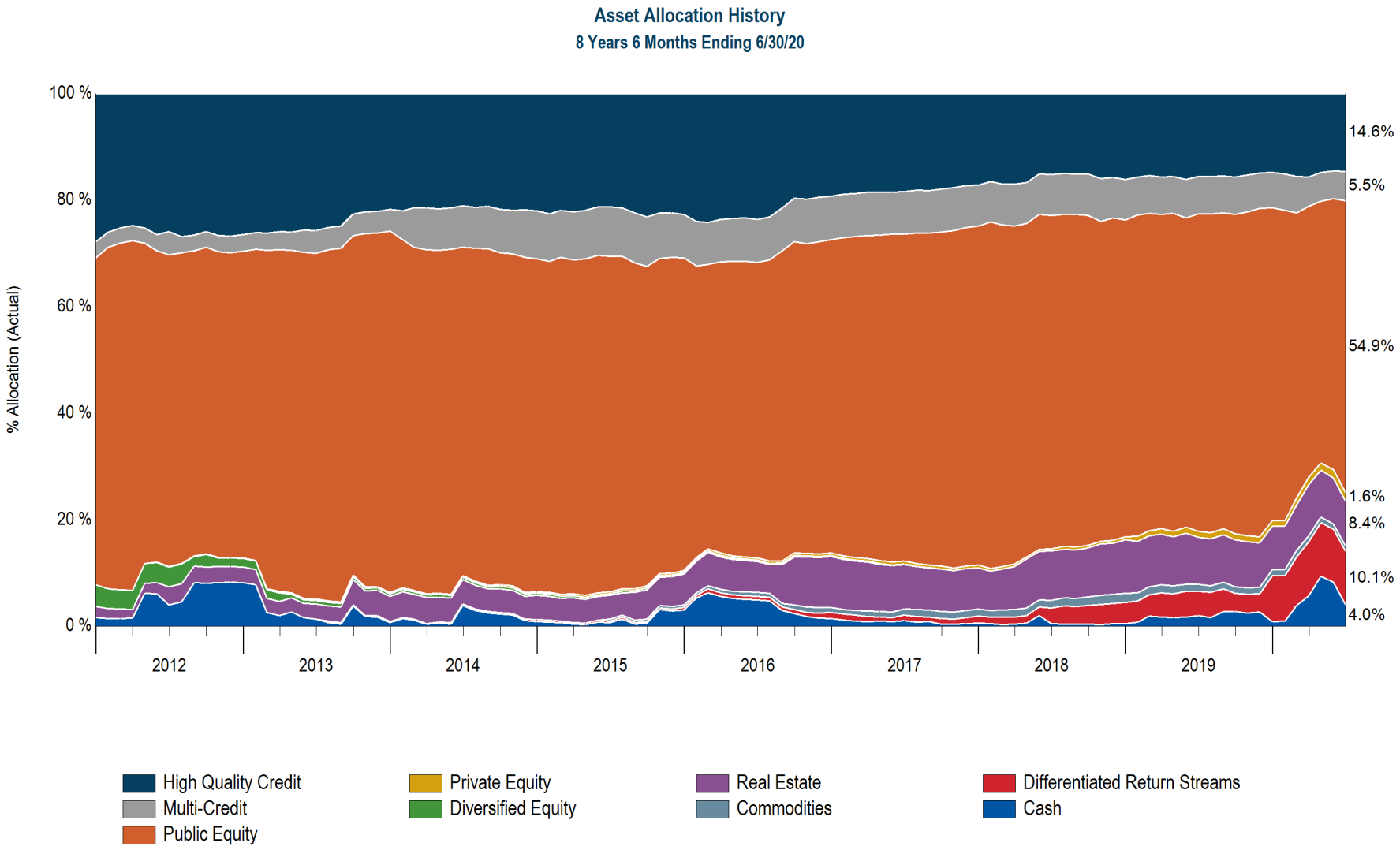


	Policy Range	Policy	%	Current	%	Difference	%	Within Range
Credit (Beta, Factor, Active)	15.0% - 65.0%	$160,257,318	25.0%	$128,962,020	20.1%	-$31,295,298	-4.9%	Yes
Equity (Beta, Factor, Active)	35.0% - 75.0%	$352,566,099	55.0%	$362,059,795	56.5%	$9,493,696	1.5%	Yes
Alternatives	10.0% - 35.0%	$128,205,854	20.0%	$124,541,333	19.4%	-$3,664,521	-0.6%	Yes
Cash	0.0% - 5.0%	$0	0.0%	$25,466,123	4.0%	$25,466,123	4.0%	Yes
Total		**$641,029,270**	**100.0%**	**$641,029,270**	**100.0%**			

	Policy Range	Policy	%	Current	%	Difference	%	Within Range
High Quality Credit	7.5% - 57.5%	$96,154,391	15.0%	$93,901,637	14.6%	-$2,252,753	-0.4%	Yes
Multi-Credit	7.5% - 30.0%	$64,102,927	10.0%	$35,060,382	5.5%	-$29,042,545	-4.5%	No
Public Equity	35.0% - 75.0%	$275,642,586	43.0%	$351,620,369	54.9%	$75,977,783	11.9%	Yes
Private Equity	0.0% - 12.0%	$32,051,464	5.0%	$10,439,426	1.6%	-$21,612,038	-3.4%	Yes
Diversified Equity	0.0% - 20.0%	$44,872,049	7.0%	--	--	-$44,872,049	-7.0%	Yes
Real Estate	2.0% - 20.0%	$80,128,659	12.5%	$54,140,253	8.4%	-$25,988,405	-4.1%	Yes
Commodities	0.0% - 7.0%	$16,025,732	2.5%	$5,937,826	0.9%	-$10,087,906	-1.6%	Yes
Differentiated Return Streams	0.0% - 15.0%	$32,051,464	5.0%	$64,463,254	10.1%	$32,411,791	5.1%	Yes
Cash	0.0% - 5.0%	$0	0.0%	$25,466,123	4.0%	$25,466,123	4.0%	Yes
Total		**$641,029,270**	**100.0%**	**$641,029,270**	**100.0%**			

Total Portfolio

As of June 30, 2020



Total Fund

The City of Bristol Employee Pension Fund ended the 2nd quarter with $641.0 million in assets (including approx. $6.8 million in net withdrawals), up from $562.6 million in March. Relative to policy targets, the portfolio segments are within +/- 12% of policy. The Fund has an overweight to the Public Equity, Cash and to the Differentiated Return Streams segments. Conversely, The Fund has an underweight to Diversified Equity, Multi-Credit, Private Equity and to the Real Estate segments. The Total Fund returned +15.2% for the quarter, 2.5% above the policy and ranking in the top quartile (16th percentile) of the *InvMetrics Public DB Net Universe*. For the Fiscal Year, The Fund lagged the benchmark and ranked below the median (74th percentile) of the same universe. The Equity segment's outperformance of their respective benchmark (*MSCI ACWI*) surged performance during the quarter.

Watch List (due to underperformance for the past three consecutive quarters)

None

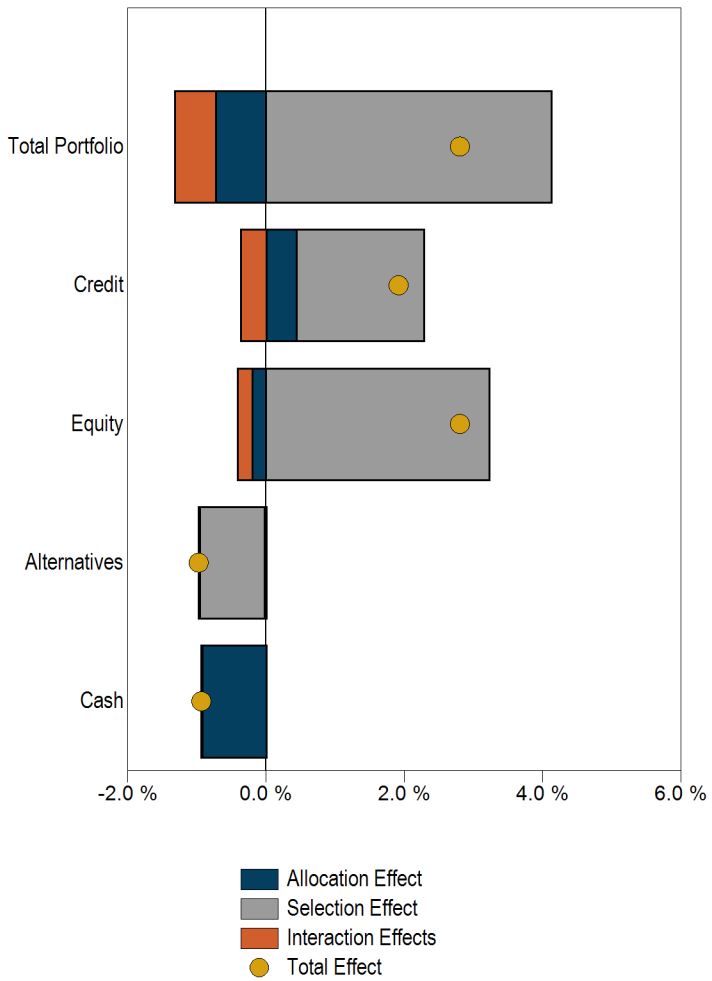
City of Bristol Unpriced Assets as of 6/30/2020	
Account Name	% of Total
Arsenal III, LP($15 mill)	1.02%
Invesco Realty ($10 million)	0.08%
Invesco Mortgage Recovery Fund II, LP($10 million)	0.47%
Heitman Value Partners III, LP($7 million)	0.16%
Lone Star ($10 million)	0.04%
Corrum Capital Real Assets, LP ($10 million)	0.93%
Kelly Park Capital	2.67%
Corrum Capital Railcar Partners, LP	0.80%
Entrust Blue Ocean Fund, LP	0.23%
Longford Capital ($15 million)	1.09%
Longford Capital Fund II, LP ($30 million)	1.96%
Longford Capital Fund III, LP($30 million)	0.23%
TOTAL	**9.68%**

Total Portfolio

Total Plan Attribution Analysis

As of June 30, 2020

Last Calendar Quarter

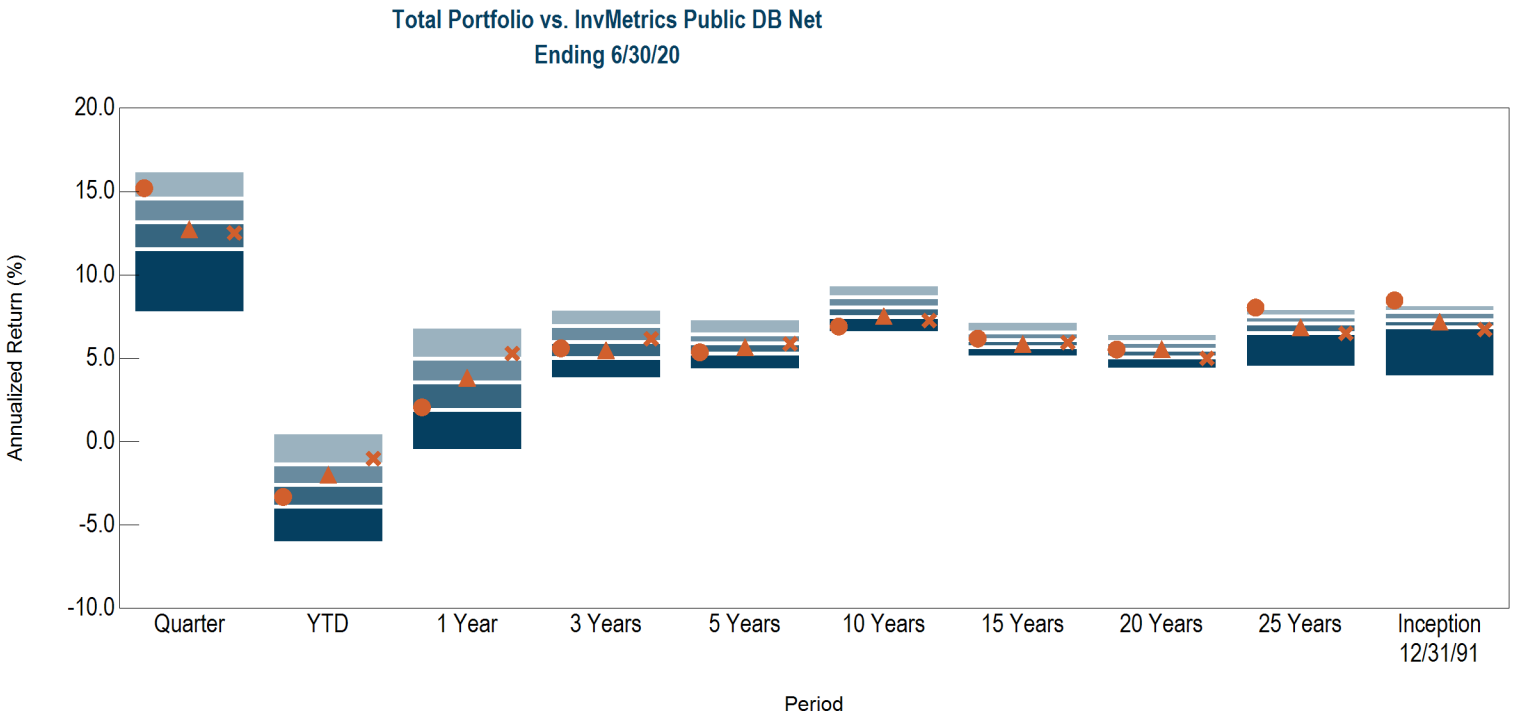


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Credit	9.94%	2.90%	7.05%	1.84%	0.44%	-0.36%	1.92%
Equity	25.20%	19.22%	5.99%	3.22%	-0.20%	-0.21%	2.80%
Alternatives	3.44%	7.89%	-4.46%	-0.93%	-0.03%	-0.01%	-0.98%
Cash	0.00%	0.03%	-0.03%	0.00%	-0.94%	0.00%	-0.94%
Total	**15.55%**	**12.74%**	**2.80%**	**4.12%**	**-0.73%**	**-0.59%**	**2.80%**

Total Portfolio

Total Plan Universe Performance

As of June 30, 2020

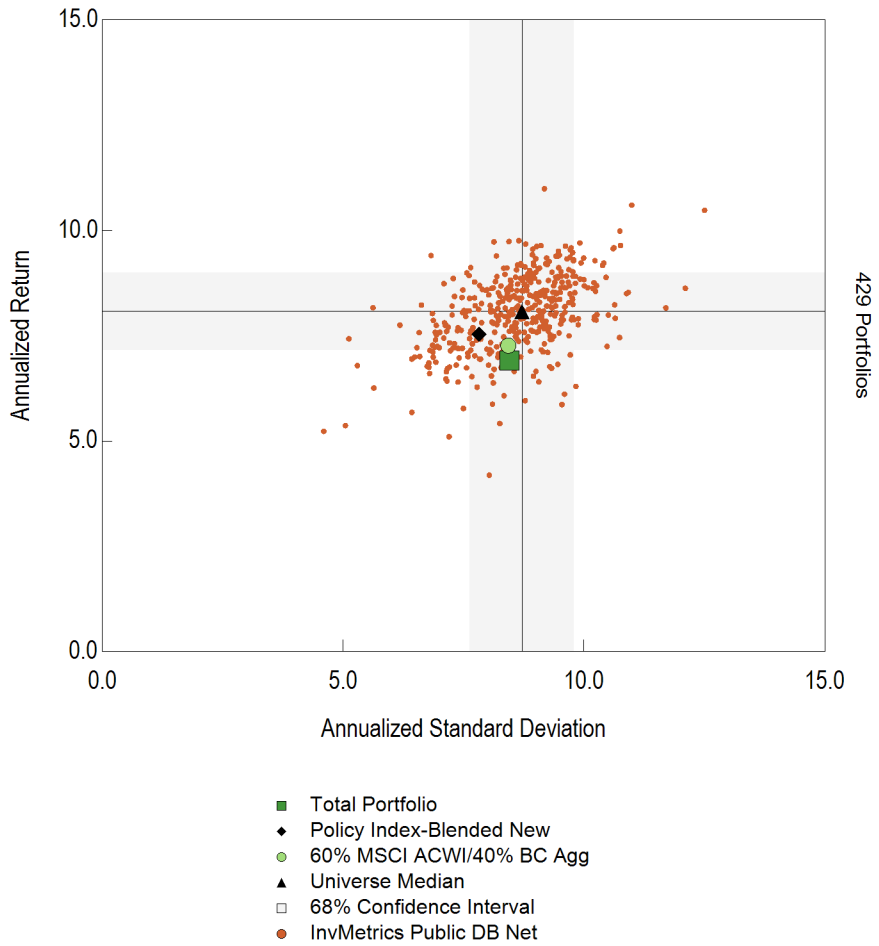


	Return (Rank)									
5th Percentile	16.23	0.55	6.87	7.95	7.39	9.41	7.21	6.50	7.99	8.24
25th Percentile	14.61	-1.36	4.98	6.95	6.46	8.68	6.57	5.99	7.51	7.81
Median	13.16	-2.56	3.57	6.00	5.93	8.08	6.10	5.52	7.10	7.29
75th Percentile	11.55	-3.88	1.92	5.05	5.32	7.48	5.70	5.07	6.55	6.87
95th Percentile	7.71	-6.07	-0.52	3.77	4.32	6.54	5.07	4.36	4.45	3.86
# of Portfolios	580	579	574	554	516	429	275	182	99	75
● **Total Portfolio**	15.20 (16)	-3.31 (65)	2.06 (74)	5.60 (62)	5.36 (74)	6.90 (91)	6.18 (47)	5.52 (50)	8.04 (4)	8.47 (1)
▲ **Policy Index-Blended New**	12.74 (58)	-1.99 (39)	3.84 (44)	5.49 (64)	5.67 (63)	7.53 (74)	5.88 (65)	5.55 (46)	6.87 (63)	7.20 (59)
× **60% MSCI ACWI/40% BC Agg**	12.52 (61)	-1.01 (19)	5.29 (23)	6.16 (46)	5.87 (54)	7.26 (81)	5.94 (62)	5.00 (80)	6.48 (76)	6.73 (78)

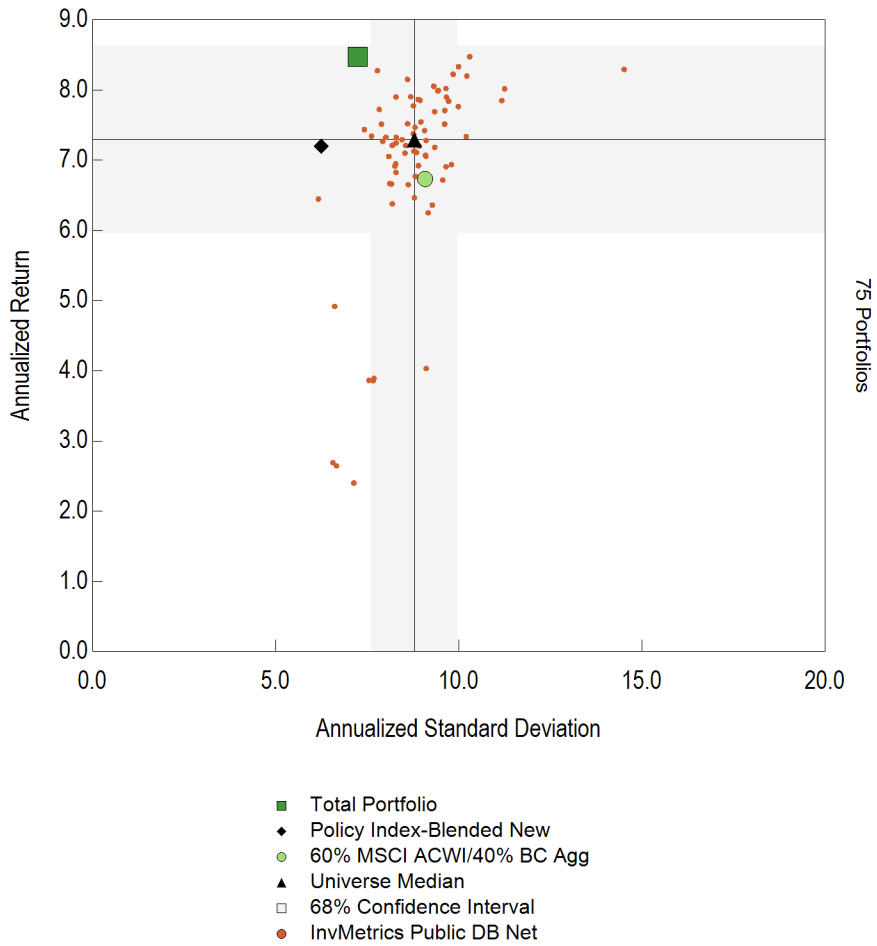
Total Plan Universe Performance

As of June 30, 2020

Annualized Return vs. Annualized Standard Deviation
10 Years Ending 6/30/20



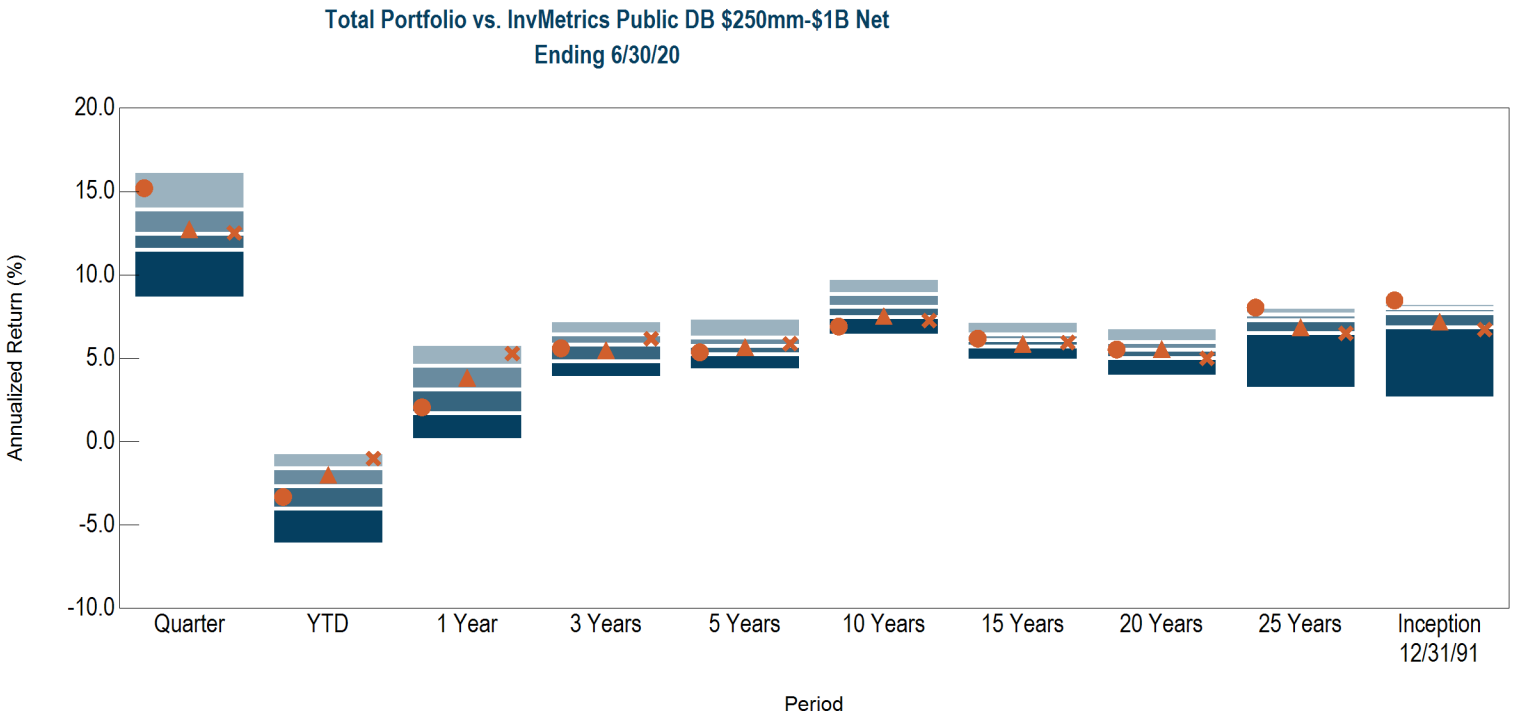
Annualized Return vs. Annualized Standard Deviation
28 Years 6 Months Ending 6/30/20



Total Portfolio

Total Plan Universe Performance

As of June 30, 2020



	Return (Rank)									
5th Percentile	16.21	-0.64	5.85	7.27	7.42	9.78	7.23	6.84	8.06	8.30
25th Percentile	13.95	-1.59	4.57	6.47	6.28	8.88	6.47	6.01	7.64	8.02
Median	12.49	-2.66	3.14	5.84	5.78	8.12	6.10	5.53	7.28	7.71
75th Percentile	11.53	-4.00	1.75	4.83	5.28	7.48	5.73	5.04	6.54	6.89
95th Percentile	8.61	-6.16	0.13	3.86	4.30	6.40	4.89	3.93	3.21	2.60
# of Portfolios	79	79	79	76	70	57	43	32	23	15
● **Total Portfolio**	15.20 (13)	-3.31 (62)	2.06 (67)	5.60 (55)	5.36 (70)	6.90 (94)	6.18 (49)	5.52 (51)	8.04 (7)	8.47 (1)
▲ **Policy Index-Blended New**	12.74 (45)	-1.99 (36)	3.84 (40)	5.49 (58)	5.67 (54)	7.53 (74)	5.88 (66)	5.55 (49)	6.87 (64)	7.20 (65)
✕ **60% MSCI ACWI/40% BC Agg**	12.52 (49)	-1.01 (10)	5.29 (10)	6.16 (40)	5.87 (46)	7.26 (85)	5.94 (63)	5.00 (76)	6.48 (77)	6.73 (79)

Total Plan Statistics

As of June 30, 2020

Statistics Summary

3 Years Ending 6/30/20

	Annualized Return (%)	Annualized Standard Deviation	Annualized Alpha (%)	Beta	Tracking Error	Up Market Capture Ratio (%)	Down Market Capture Ratio (%)	Sharpe Ratio	Information Ratio
Total Portfolio	5.60	11.77	-0.65	1.14	2.43	111.48	110.45	0.34	0.05
Policy Index-Blended New	5.49	10.19	0.00	1.00	0.00	100.00	100.00	0.38	--
Boyd Watterson Fixed Income	5.80	3.45	0.51	0.99	1.15	103.50	89.83	1.20	0.41
BBgBarc US Aggregate TR	5.32	3.27	0.00	1.00	0.00	100.00	100.00	1.12	--
EnTrust Structured Income II-A	-0.68	17.62	-2.08	0.26	17.76	58.66	233.58	-0.13	-0.34
BBgBarc US Aggregate TR	5.32	3.27	0.00	1.00	0.00	100.00	100.00	1.12	--
OCO Opportunities Offshore Fund, Ltd.	-8.33	18.01	-12.98	1.40	13.69	70.23	202.20	-0.55	-0.85
BBgBarc US High Yield TR	3.33	8.73	0.00	1.00	0.00	100.00	100.00	0.19	--
Prytania Athena Fund	-6.14	24.51	-10.87	2.13	16.34	119.44	184.83	-0.32	-0.51
BBgBarc Global High Yield TR	2.22	10.12	0.00	1.00	0.00	100.00	100.00	0.06	--
EnTrust Structured Income Fund	-1.71	20.68	-3.75	0.38	20.74	59.40	278.72	-0.16	-0.34
BBgBarc US Aggregate TR	5.32	3.27	0.00	1.00	0.00	100.00	100.00	1.12	--
Beach Point TR Offshore Fund II	0.10	10.97	-3.85	1.19	3.94	82.49	119.59	-0.14	-0.82
BBgBarc US High Yield TR	3.33	8.73	0.00	1.00	0.00	100.00	100.00	0.19	--
Neuberger Berman Large Cap Growth	21.97	18.41	2.43	1.03	3.13	107.98	96.01	1.10	0.95
Russell 1000 Growth	18.99	17.64	0.00	1.00	0.00	100.00	100.00	0.98	--
Robeco LCV	1.35	19.10	-0.56	1.04	2.83	103.70	103.51	-0.02	-0.17
Russell 1000 Value	1.82	18.09	0.00	1.00	0.00	100.00	100.00	0.01	--
Fiera SMID Growth	12.57	22.23	0.81	0.97	3.86	96.34	96.21	0.49	0.12
Russell 2500 Growth	12.10	22.53	0.00	1.00	0.00	100.00	100.00	0.46	--

Total Portfolio

Total Plan Statistics

As of June 30, 2020

	Annualized Return (%)	Annualized Standard Deviation	Annualized Alpha (%)	Beta	Tracking Error	Up Market Capture Ratio (%)	Down Market Capture Ratio (%)	Sharpe Ratio	Information Ratio
Neuberger Berman International	2.89	17.34	1.99	1.11	4.39	116.78	101.67	0.07	0.47
MSCI EAFE	0.81	15.17	0.00	1.00	0.00	100.00	100.00	-0.06	--
GAMCO Gold	15.41	31.60	0.40	0.84	9.04	71.48	88.04	0.44	-0.27
Philadelphia Gold and Silver Index	17.88	36.75	0.00	1.00	0.00	100.00	100.00	0.44	--
Sprott Asset Management	12.24	36.96	-5.41	0.99	7.12	84.83	101.28	0.29	-0.79
Philadelphia Gold and Silver Index	17.88	36.75	0.00	1.00	0.00	100.00	100.00	0.44	--
iShares MSCI Emerging Markets ETF(EEM)	1.20	19.04	-0.71	1.01	3.75	102.36	103.13	-0.02	-0.18
MSCI Emerging Markets	1.90	18.52	0.00	1.00	0.00	100.00	100.00	0.01	--
Glovista Emerging Markets	0.48	18.51	-1.38	0.98	3.59	97.43	102.68	-0.06	-0.40
MSCI Emerging Markets	1.90	18.52	0.00	1.00	0.00	100.00	100.00	0.01	--
Mountain Lake Real Estate Fund I LP	-0.79	16.31	-1.66	0.16	16.46	-12.78	--	-0.15	-0.38
NCREIF Property Index	5.44	2.70	0.00	1.00	0.00	100.00	100.00	1.40	--
Invesco Realty ($10 million)	4.52	7.87	-0.13	0.85	7.53	76.98	--	0.36	-0.12
NCREIF Property Index	5.44	2.70	0.00	1.00	0.00	100.00	100.00	1.40	--
Lone Star ($10 million)	-2.18	11.30	-3.79	0.30	11.43	-34.69	--	-0.34	-0.67
NCREIF Property Index	5.44	2.70	0.00	1.00	0.00	100.00	100.00	1.40	--
Cash Account	1.37	0.19	0.21	0.66	0.15	77.33	--	-1.49	-2.71
ICE BofA 91 Days T-Bills TR	1.77	0.22	0.00	1.00	0.00	100.00	--	0.50	--

Account	Fee Schedule	Market Value As of 6/30/2020	% of Portfolio	Estimated Annual Fee ($)	Estimated Annual Fee (%)
Boyd Watterson Fixed Income	0.40% of First 5.0 Mil, 0.38% of Next 10.0 Mil, 0.25% Thereafter	$36,440,470	5.7%	$111,101	0.30%
GoldenTree High Grade Floating Rate Fund, Ltd.	0.25% of Assets	$31,177,577	4.9%	$77,944	0.25%
EnTrust Structured Income II-A	0.75% of Assets	$26,283,590	4.1%	$197,127	0.75%
OCO Opportunities Offshore Fund, Ltd.	1.50% of Assets	$9,177,327	1.4%	$137,660	1.50%
Prytania Athena Fund	1.50% of Assets	$10,657,129	1.7%	$159,857	1.50%
EnTrust Structured Income Fund	0.75% of Assets	$8,084,998	1.3%	$60,637	0.75%
Beach Point TR Offshore Fund II	1.50% of Assets	$7,140,928	1.1%	$107,114	1.50%
Neuberger Berman Large Cap Growth	0.44% of Assets	$116,620,986	18.2%	$513,132	0.44%
iShares Russell 1000 Value ETF(IWD)	0.20% of Assets	$21,609,486	3.4%	$43,219	0.20%
Columbia Dividend Income	0.45% of Assets	$10,280,458	1.6%	$46,262	0.45%
Eagle Equity	1.00% of First 5.0 Mil, 0.75% Thereafter	$15,760,478	2.5%	$130,704	0.83%
Robeco LCV	0.50% of Assets	$39,624,802	6.2%	$198,124	0.50%
Miller Opportunity Trust Class I(LMNOX)	1.15% of Assets	$5,275,947	0.8%	$60,673	1.15%
Fiera SMID Growth	0.60% of Assets	$41,781,418	6.5%	$250,689	0.60%
Neuberger Berman International	0.59% of Assets	$42,921,913	6.7%	$253,239	0.59%
Vanguard Developed Mkts Ind(VTMNX)	0.05% of Assets	$13,908,942	2.2%	$6,954	0.05%
ACA-Eastbay	2.00% of Assets	$559,398	0.1%	$11,188	2.00%
GAMCO Gold	1.00% of Assets	$13,822,734	2.2%	$138,227	1.00%
Sprott Asset Management	1.00% of Assets	$13,629,221	2.1%	$136,292	1.00%
iShares MSCI Emerging Markets ETF(EEM)	0.67% of Assets	$2,336,144	0.4%	$15,652	0.67%
Glovista Emerging Markets	0.75% of Assets	$13,488,442	2.1%	$101,163	0.75%
Arsenal III, LP($15 mill)	2.00% of Assets	$6,526,282	1.0%	$130,526	2.00%
Zephyr Peacock India Fund III Limited ($5 million)	2.00% of Assets	$2,494,217	0.4%	$49,884	2.00%
Zephyr Peacock India Growth Fund US, LP	2.00% of Assets	$1,418,927	0.2%	$28,379	2.00%
Boyd Titanium GSA Fund ($10 million)	1.25% of Assets	$37,867,421	5.9%	$473,343	1.25%
Boyd Watterson State Govt Fund, LP	1.25% of Assets	$11,059,730	1.7%	$138,247	1.25%
Mountain Lake Real Estate Fund I LP	0.35% of Assets	$401,821	0.1%	$1,406	0.35%
Invesco Realty ($10 million)	1.00% of Assets	$483,454	0.1%	$4,835	1.00%
Invesco Mortgage Recovery Fund II, LP($10 million)	1.00% of Assets	$3,038,173	0.5%	$30,382	1.00%
Heitman Value Partners III, LP($7 million)	1.25% of Assets	$1,039,660	0.2%	$12,996	1.25%
Lone Star ($10 million)	0.45% of Assets	$249,994	0.0%	$1,125	0.45%
Corrum Capital Real Assets, LP ($10 million)	0.90% of Assets	$5,937,826	0.9%	$53,440	0.90%
Kelly Park Capital	2.00% of Assets	$17,092,098	2.7%	$341,842	2.00%
Verition International Multi-Strategy Fund, Ltd.	2.00% of Assets	$19,723,684	3.1%	$394,474	2.00%
Corrum Capital Railcar Partners, LP	1.50% of Assets	$5,101,912	0.8%	$76,529	1.50%
Entrust Blue Ocean Fund, LP	1.50% of Assets	$1,501,262	0.2%	$22,519	1.50%
Longford Capital ($15 million)	2.00% of Assets	$6,979,323	1.1%	$139,586	2.00%
Longford Capital Fund II, LP ($30 million)	2.00% of Assets	$12,564,975	2.0%	$251,300	2.00%
Longford Capital Fund III, LP($30 million)	2.00% of Assets	$1,500,000	0.2%	$30,000	2.00%
Cash Account	0.38% of Assets	$25,466,123	4.0%	$96,771	0.38%
Investment Management Fee		**$641,029,270**	**100.0%**	**$5,034,542**	**0.79%**

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Total Portfolio

Market Indices

As of August 31, 2020

Name	Aug-20	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs
		Periods Ending 8/31/20						
US Equity								
Russell 3000	7.2	9.4	21.4	13.9	13.9	14.9	9.5	6.5
S&P 500	7.2	9.7	21.9	14.5	14.5	15.2	9.5	6.3
Russell 1000	7.3	10.4	22.5	14.6	14.3	15.2	9.6	6.5
Russell 1000 Growth	10.3	30.5	44.3	24.2	20.7	19.0	12.3	6.1
Russell 1000 Value	4.1	-9.3	0.8	4.5	7.5	11.0	6.6	6.4
Russell MidCap	3.5	-0.4	8.7	8.8	9.8	13.1	8.9	8.3
Russell 2000	5.6	-5.5	6.0	5.0	7.7	11.5	7.3	6.9
Russell 2000 Growth	5.9	6.2	17.3	10.9	10.5	14.1	9.1	5.8
Russell 2000 Value	5.4	-17.7	-6.1	-1.4	4.4	8.7	5.3	7.6
International Equity								
MSCI ACWI	6.1	4.7	16.5	9.0	10.2	9.9	6.9	4.9
MSCI World ex USA	5.2	-4.4	6.0	2.4	4.8	5.6	4.2	3.5
MSCI EAFE	5.1	-4.6	6.1	2.3	4.7	5.9	4.2	3.5
MSCI Emerging Markets	2.2	0.4	14.5	2.8	8.7	3.8	6.6	7.4
Fixed Income								
91 Day T-Bills	0.0	0.4	1.0	1.6	1.1	0.6	1.2	1.5
BBgBarc US Aggregate TR	-0.8	6.9	6.5	5.1	4.3	3.7	4.4	5.1
BBgBarc US Govt/Credit TR	-1.2	8.1	7.3	5.7	4.8	3.9	4.5	5.2
BBgBarc US Municipal TR	-0.5	3.3	3.2	4.1	4.0	4.0	4.3	4.8
BBgBarc US High Yield TR	1.0	1.7	4.7	4.9	6.5	6.9	7.1	7.2
FTSE WGBI TR	0.0	7.9	6.1	4.2	4.2	2.2	3.5	4.7
FTSE WGBI ex US TR	0.0	6.2	4.5	3.2	4.1	1.6	3.1	4.6
Real Estate								
FTSE NAREIT All REIT	0.3	-11.5	-9.2	3.4	7.2	9.7	6.5	9.7
NCREIF Property Index	0.0	-0.3	2.7	5.4	6.8	9.7	7.7	8.4
Alternatives								
HFRI Fund of Funds Composite Index	2.1	2.8	5.5	3.1	2.8	3.1	2.8	3.2
Inflation								
Consumer Price Index	--	--	--	--	--	--	--	--

Total Portfolio

Run Date: September 9, 2020

Performance Summary

As of August 31, 2020

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Portfolio	**682,277,728**	**100.00**	**100.00**	**2.98**	**9.91**	**7.45**	**3.79**	**10.62**	**7.14**	**7.80**	**7.04**	**5.88**	**8.69**	**Dec-91**
Policy Index-Blended New				*3.58*	*9.95*	*7.46*	*5.32*	*12.19*	*7.26*	*8.03*	*7.79*	*5.93*	*7.42*	*Dec-91*
60% MSCI ACWI/40% BC Agg				*3.35*	*9.57*	*7.25*	*6.17*	*13.06*	*7.80*	*8.11*	*7.63*	*5.31*	*6.95*	*Dec-91*
Credit	**131,455,550**	**19.27**	**25.00**	**0.39**	**5.91**	**1.66**	**-6.83**	**-5.09**	**--**	**--**	**--**	**--**	**0.69**	**Dec-18**
BBgBarc US Aggregate TR				*-0.81*	*1.31*	*0.67*	*6.85*	*6.47*	*5.09*	*4.33*	*3.65*	*5.05*	*9.41*	*Dec-18*
High Quality Credit	**93,812,460**	**13.75**	**15.00**	**0.27**	**4.24**	**1.08**	**-2.04**	**-0.19**	**--**	**--**	**--**	**--**	**4.27**	**Dec-18**
BBgBarc US Aggregate TR				*-0.81*	*1.31*	*0.67*	*6.85*	*6.47*	*5.09*	*4.33*	*3.65*	*5.05*	*9.41*	*Dec-18*
Boyd Watterson Fixed Income	36,884,271	5.41		-0.83	2.00	1.22	7.22	6.84	5.72	4.60	4.00	5.59	6.41	Mar-90
BBgBarc US Aggregate TR				*-0.81*	*1.31*	*0.67*	*6.85*	*6.47*	*5.09*	*4.33*	*3.65*	*5.05*	*6.09*	*Mar-90*
GoldenTree High Grade Floating Rate Fund, Ltd.	31,893,104	4.67		1.81	2.55	2.30	0.28	1.97	--	--	--	--	2.40	Jan-18
BBgBarc US Aggregate Float Adjusted TR				*-0.87*	*1.38*	*0.70*	*7.04*	*6.57*	*5.17*	*4.41*	*3.69*	--	*6.54*	*Jan-18*
EnTrust Structured Income II-A	25,035,085	3.67		0.00	9.82	-0.57	-13.74	-9.87	-0.88	--	--	--	-0.83	Jul-17
BBgBarc US Aggregate TR				*-0.81*	*1.31*	*0.67*	*6.85*	*6.47*	*5.09*	*4.33*	*3.65*	*5.05*	*5.26*	*Jul-17*
Multi-Credit	**37,643,090**	**5.52**	**10.00**	**0.68**	**10.54**	**3.18**	**-17.43**	**-15.91**	**--**	**--**	**--**	**--**	**-7.36**	**Dec-18**
BBgBarc US High Yield TR				*0.95*	*6.72*	*5.68*	*1.67*	*4.71*	*4.88*	*6.45*	*6.90*	*7.22*	*9.44*	*Dec-18*
OCO Opportunities Offshore Fund, Ltd.	9,866,155	1.45		0.00	19.82	7.51	-1.49	-3.01	-6.74	-1.53	--	--	0.78	Jan-14
BBgBarc US High Yield TR				*0.95*	*6.72*	*5.68*	*1.67*	*4.71*	*4.88*	*6.45*	*6.90*	*7.22*	*5.16*	*Jan-14*
Prytania Athena Fund	10,612,378	1.56		0.00	5.42	-0.02	-30.62	-29.75	-7.39	-1.51	--	--	-0.47	Feb-14
BBgBarc Global High Yield TR				*1.64*	*8.68*	*6.26*	*1.31*	*5.35*	*3.57*	*6.00*	*6.55*	*7.74*	*4.27*	*Feb-14*
EnTrust Structured Income Fund	7,846,984	1.15		0.00	7.94	-0.28	-23.53	-19.66	-4.21	1.05	--	--	1.78	Mar-13
BBgBarc US Aggregate TR				*-0.81*	*1.31*	*0.67*	*6.85*	*6.47*	*5.09*	*4.33*	*3.65*	*5.05*	*3.47*	*Mar-13*
Beach Point TR Offshore Fund II	7,617,573	1.12		3.43	10.12	6.67	-2.87	-0.11	1.99	3.53	--	--	5.15	Dec-11
BBgBarc US High Yield TR				*0.95*	*6.72*	*5.68*	*1.67*	*4.71*	*4.88*	*6.45*	*6.90*	*7.22*	*6.64*	*Dec-11*
Greywolf Distressed Opp Fund, LP	1,700,000	0.25		0.00	--	--	--	--	--	--	--	--	0.00	Jul-20
BBgBarc US Universal TR				*-0.58*	*2.01*	*1.17*	*6.40*	*6.41*	*5.09*	*4.61*	*3.97*	*5.28*	*-0.58*	*Jul-20*

Approx. 10% of portfolio is unvalued as of 8/31. Additionally, approx. 15% is only valued quarterly.

Total Portfolio

Run Date: September 9, 2020

Performance Summary

As of August 31, 2020

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Equity	**407,301,825**	**59.70**	**55.00**	**4.89**	**15.23**	**12.31**	**11.33**	**23.28**	**--**	**--**	**--**	**--**	**22.93**	**Dec-18**
MSCI ACWI				*6.12*	*15.30*	*11.73*	*4.75*	*16.52*	*8.99*	*10.21*	*9.90*	*4.92*	*18.45*	*Dec-18*
Public Equity	**396,265,696**	**58.08**	**43.00**	**5.03**	**15.54**	**12.70**	**11.79**	**24.14**	**--**	**--**	**--**	**--**	**23.41**	**Dec-18**
MSCI ACWI				*6.12*	*15.30*	*11.73*	*4.75*	*16.52*	*8.99*	*10.21*	*9.90*	*4.92*	*18.45*	*Dec-18*
Neuberger Berman Large Cap Growth	135,955,341	19.93		7.98	20.96	16.58	35.14	50.34	26.55	22.62	17.83	9.52	14.75	Jan-79
Russell 1000 Growth				*10.32*	*23.98*	*18.81*	*30.47*	*44.34*	*24.18*	*20.66*	*19.02*	*6.13*	*12.06*	*Jan-79*
iShares Russell 1000 Value ETF(IWD)	23,392,048	3.43		4.08	7.47	8.25	-9.41	0.73	--	--	--	--	3.84	Jan-19
Russell 1000 Value				*4.13*	*7.53*	*8.25*	*-9.35*	*0.84*	*4.50*	*7.53*	*11.05*	*6.39*	*4.01*	*Jan-19*
Columbia Dividend Income	11,162,748	1.64		4.28	8.99	8.58	-0.50	9.37	--	--	--	--	7.45	Apr-19
Russell 1000 Value				*4.13*	*7.53*	*8.25*	*-9.35*	*0.84*	*4.50*	*7.53*	*11.05*	*6.39*	*-0.77*	*Apr-19*
Eagle Equity	17,632,348	2.58		7.86	13.58	11.88	0.81	12.96	--	--	--	--	11.69	Mar-19
Russell 1000 Value				*4.13*	*7.53*	*8.25*	*-9.35*	*0.84*	*4.50*	*7.53*	*11.05*	*6.39*	*1.74*	*Mar-19*
Robeco LCV	42,453,798	6.22		2.93	7.45	7.14	-11.48	-1.35	3.18	6.40	--	--	7.05	Sep-13
Russell 1000 Value				*4.13*	*7.53*	*8.25*	*-9.35*	*0.84*	*4.50*	*7.53*	*11.05*	*6.39*	*7.83*	*Sep-13*
Miller Opportunity Trust Class I(LMNOX)	6,341,551	0.93		9.51	32.84	20.20	8.32	33.52	--	--	--	--	18.97	Mar-19
Russell 1000 Value				*4.13*	*7.53*	*8.25*	*-9.35*	*0.84*	*4.50*	*7.53*	*11.05*	*6.39*	*1.74*	*Mar-19*
Fiera SMID Growth	46,178,470	6.77		4.44	12.65	10.52	13.45	23.83	15.54	11.83	--	--	10.41	Oct-14
Russell 2500 Growth				*4.50*	*14.28*	*10.22*	*12.44*	*21.99*	*15.21*	*13.09*	*15.58*	*6.74*	*12.00*	*Oct-14*
Neuberger Berman International	47,799,704	7.01		4.15	13.70	11.36	1.83	15.87	5.50	7.50	8.28	--	6.83	Jan-05
MSCI EAFE				*5.14*	*11.26*	*7.59*	*-4.61*	*6.13*	*2.34*	*4.72*	*5.88*	*3.46*	*4.47*	*Jan-05*
Vanguard Developed Mkts Ind(VTMNX)	14,997,661	2.20		5.06	11.49	7.83	--	--	--	--	--	--	7.15	Feb-20
FTSE Developed ex North America				*5.19*	*11.75*	*7.90*	*-3.65*	*7.91*	*2.87*	*5.57*	*6.47*	*4.19*	*8.37*	*Feb-20*
ACA-Eastbay	559,398	0.08		0.00	-8.57	0.00	-29.10	-33.17	-32.66	-18.76	--	--	-11.06	Mar-14
GAMCO Gold	15,999,870	2.35		-2.02	21.66	15.75	44.18	42.98	17.99	22.64	--	--	-0.97	Jan-12
Philadelphia Gold and Silver Index				*-0.21*	*28.51*	*19.40*	*44.82*	*56.88*	*20.56*	*26.98*	*-3.91*	*--*	*-2.51*	*Jan-12*
Sprott Asset Management	15,926,686	2.33		-1.87	23.94	16.86	40.84	41.51	14.69	20.34	--	--	-2.73	Jan-12
Philadelphia Gold and Silver Index				*-0.21*	*28.51*	*19.40*	*44.82*	*56.88*	*20.56*	*26.98*	*-3.91*	*--*	*-2.51*	*Jan-12*
iShares MSCI Emerging Markets ETF(EEM)	2,601,947	0.38		2.89	18.73	11.38	-0.17	13.79	2.15	--	--	--	7.26	Jan-17
MSCI Emerging Markets				*2.21*	*19.53*	*11.34*	*0.45*	*14.49*	*2.83*	*8.66*	*3.76*	*7.43*	*8.12*	*Jan-17*
Glovista Emerging Markets	15,264,127	2.24		3.37	21.05	13.16	1.31	15.49	2.41	6.50	--	--	2.21	Apr-14
MSCI Emerging Markets				*2.21*	*19.53*	*11.34*	*0.45*	*14.49*	*2.83*	*8.66*	*3.76*	*7.43*	*4.13*	*Apr-14*

Total Portfolio

Run Date: September 9, 2020

Performance Summary

As of August 31, 2020

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Private Equity	**11,036,129**	**1.62**	**5.00**	**0.00**	**5.17**	**0.00**	**0.37**	**-4.65**	**--**	**--**	**--**	**--**	**5.27**	**Dec-18**
7.5% Annual Return				*0.60*	*1.82*	*1.21*	*4.94*	*7.50*	*7.50*	*7.50*	*7.50*	*7.50*	*7.50*	*Dec-18*
Arsenal III, LP($15 mill)	7,122,985	1.04		0.00	9.14	0.00	8.75	3.12	--	--	--	--	24.24	Jan-19
Zephyr Peacock India Fund III Limited ($5 million)	2,494,217	0.37		0.00	-0.42	0.00	-12.74	-16.55	-2.90	0.00	--	--	-1.67	May-12
Zephyr Peacock India Growth Fund US, LP	1,418,927	0.21		0.00	-3.00	0.00	-3.66	-9.58	--	--	--	--	-11.83	Jul-18
Diversified Equity	**--**	**--**	**7.00**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**Dec-18**
HFRI FOF: Diversified Index				*2.24*	*6.15*	*4.32*	*3.28*	*5.40*	*3.46*	*2.72*	*3.22*	*3.27*	*6.83*	*Dec-18*
Alternatives	**125,297,578**	**18.36**	**20.00**	**0.20**	**0.57**	**0.49**	**0.44**	**-2.19**	**--**	**--**	**--**	**--**	**3.58**	**Dec-18**
HFRI Fund of Funds Composite Index				*2.06*	*6.52*	*4.43*	*2.78*	*5.48*	*3.11*	*2.75*	*3.15*	*3.22*	*6.69*	*Dec-18*
Real Estate	**53,517,104**	**7.84**	**12.50**	**0.00**	**0.83**	**0.00**	**2.51**	**6.00**	**--**	**--**	**--**	**--**	**6.68**	**Dec-18**
NCREIF Property Index				*0.00*	*-0.99*	*0.00*	*-0.29*	*2.69*	*5.44*	*6.77*	*9.70*	*8.42*	*3.62*	*Dec-18*
Boyd Titanium GSA Fund ($10 million)	37,432,972	5.49		0.00	0.90	0.00	2.35	5.49	7.19	8.00	--	--	7.31	Sep-13
Boyd Watterson State Govt Fund, LP	10,902,422	1.60		0.00	1.27	0.00	3.97	10.04	--	--	--	--	8.06	Feb-18
Mountain Lake Real Estate Fund I LP	401,821	0.06		0.00	0.00	0.00	0.00	-22.07	-0.79	7.55	--	--	8.10	Jun-12
Invesco Realty ($10 million)	483,233	0.07		0.00	-0.05	0.00	-0.48	-4.78	4.50	3.45	9.49	--	9.66	Dec-09
Invesco Mortgage Recovery Fund II, LP($10 million)	3,015,775	0.44		0.00	-0.74	0.00	0.70	0.42	12.21	10.59	--	--	9.66	Mar-15
Heitman Value Partners III, LP($7 million)	1,026,245	0.15		0.00	-1.28	0.00	3.62	13.59	13.55	16.37	--	--	15.17	Apr-15
Lone Star ($10 million)	254,636	0.04		0.00	1.78	0.00	-13.11	-6.76	-1.60	4.56	--	--	7.77	Jun-11
Commodities	**5,937,826**	**0.87**	**2.50**	**0.00**	**0.00**	**0.00**	**-16.75**	**-20.33**	**--**	**--**	**--**	**--**	**-13.04**	**Dec-18**
Bloomberg Commodity Index TR USD				*6.76*	*15.43*	*12.85*	*-9.03*	*-3.90*	*-3.13*	*-3.10*	*-5.05*	*-0.44*	*-1.23*	*Dec-18*
Corrum Capital Real Assets, LP ($10 million)	5,937,826	0.87		0.00	0.00	0.00	-16.75	-20.33	-1.60	0.95	--	--	1.02	Jun-15
Differentiated Return Stream	**65,842,649**	**9.65**	**5.00**	**0.39**	**0.39**	**0.95**	**0.70**	**-14.75**	**--**	**--**	**--**	**--**	**1.21**	**Dec-18**
Kelly Park Capital	17,369,004	2.55		0.00	1.62	0.00	2.17	--	--	--	--	--	2.17	Dec-19
Verition International Multi-Strategy Fund, Ltd.	20,330,826	2.98		1.27	7.49	3.08	19.59	--	--	--	--	--	19.59	Dec-19
Corrum Capital Railcar Partners, LP	3,654,882	0.54		0.00	-28.36	0.00	-46.27	-63.62	--	--	--	--	-35.50	May-18
Entrust Blue Ocean Fund, LP	2,561,484	0.38		0.00	2.85	0.00	--	--	--	--	--	--	2.85	Apr-20
Longford Capital ($15 million)	7,631,870	1.12		0.00	9.49	0.00	11.79	-3.24	7.33	13.92	--	--	-0.97	Jul-13
Longford Capital Fund II, LP ($30 million)	12,946,137	1.90		0.00	-4.21	0.00	-5.55	-0.82	7.71	--	--	--	-1.90	Nov-16
Longford Capital Fund III, LP($30 million)	1,348,446	0.20		0.00	-10.10	0.00	--	--	--	--	--	--	-10.10	Apr-20
Cash	**18,222,775**	**2.67**	**0.00**	**0.00**	**0.00**	**0.00**	**0.26**	**0.77**	**--**	**--**	**--**	**--**	**1.29**	**Dec-18**
91 Day T-Bills				*0.01*	*0.03*	*0.02*	*0.42*	*0.98*	*1.60*	*1.13*	*0.59*	*1.47*	*1.49*	*Dec-18*
Cash Account	18,222,775	2.67		0.00	0.00	0.00	0.26	0.77	1.33	0.88	--	--	0.58	Dec-11
ICE BofA 91 Days T-Bills TR				*0.01*	*0.04*	*0.03*	*0.62*	*1.26*	*1.72*	*1.20*	*0.64*	*1.61*	*0.72*	*Dec-11*

Total Portfolio

Run Date: September 9, 2020

Performance Summary

As of August 31, 2020

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date

- Policy Index-Blended New = MSCI ACWI 55% / BBgBarc US Aggregate TR 25% / HFRI Fund of Funds Composite Index 20%
- 60% MSCI ACWI/40% BC Agg = MSCI ACWI 60% / BBgBarc US Aggregate TR 40%
- 7.5% Annual Return = 0.61
- NCREIF Property Index = NCREIF Property Index

Prior to 1/1/2019 the Policy Index Blended New consists of 15% Russell 1000 Growth, 15% Russell 1000 Value, 5% Russell MidCap, 13.6% MSCI EAFE, 7.5% MSCI Emerging Markets, 21.3% BC US Aggregate, 7.6% BofA HY BB-B Rated Constrained Index, 10% HFRX Global Hedge Fund Index, 5% Private Equity Actual.

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September 2020

PRESENTATION FOR:

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Agenda

- Overview – Cost
- Account Review
- Public Pension Marketplace
- Performance
- Questions

BWC Pricing Summary

- 16.5 BPS includes:
  - Service Model
  - Custodian – Approximately 5 BPS (current approximately: 2.5 BPS)
    - Trading
    - Wire
    - DVP
    - Miscellaneous Fees
  - Advent – Approximately 0.5 BPS
  - COLA Adjustment
  - Insurance

Investment Performance Service Model

- ✓ Twelve meetings a year (additional phone/conference access, if necessary)
  - All meetings attended by, but not limited to, at least one partner of the firm
- ✓ Full client assessment
- ✓ Asset/Liability Study
- ✓ Creation of Investment Policy Statement outlining risk tolerance, liquidity needs and allowable investment options
- ✓ Asset allocation analysis
- ✓ BWC proprietary S.M.A.R.T Consulting (includes trustee education)
- ✓ Primary research on managers performed by BWC
- ✓ Secondary research on managers from third party providers
- ✓ Full access to investment committee and staff
- ✓ Customized performance reporting
- ✓ Complete back office integration (accounting, compliance, etc. with dedicated team member)
- ✓ Full online access (account data, market commentary, portfolio analytics, etc.)
- ✓ Travel

City of Bristol Pension Plan Overview

1991 - 2019	Value
Market Value *As of December 1991**	$ 120,987,401
Withdrawals *Since December 1991***	$ (473,632,611)
Investment Earnings	$ 1,149,229,003
Current Assets *As of December 31, 2019****	$ 675,596,392

**Merrill Lynch AIM Report, December 31, 2011*
***Approximate Numbers, based on Merrill Lynch AIM Report & Investorforce Reports*
*****Investorforce Report, December 31, 2019*

Long Term Comparison – City of Bristol vs. Median Public Fund & CalPERS

- City of Bristol value as of June 30, 1999: $330,190,340*

Median Public Fund at 5.66%**	$993,062,289
State of California Pension Fund at 5.8%***	$1,019,712,439
City of Bristol compounded at 6.64%**	$1,194,447,570
Excess Profit over Median Public Fund	**$201,385,281**
Excess Profit Over State of California Pension Fund	**$174,735,131**

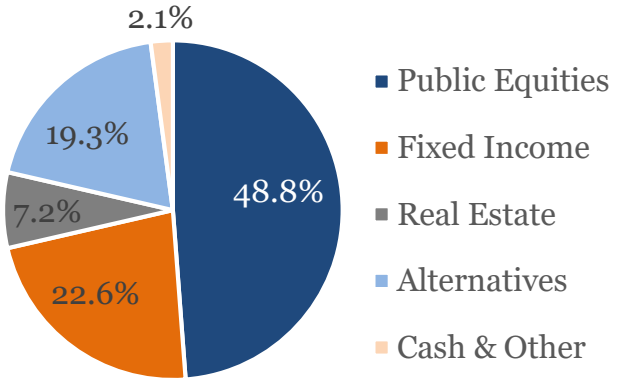
**Numbers compounded over 20 years*

**Merrill Lynch AIM Report, June 30, 1999*
***Investorforce, median return for public pension funds, June 30, 2018*
****CalPERS*

Public Pension Fund Asset Allocation Summary

The Average Public Pension Fund Asset Allocation:*

- Public equities: 48.8%
- Fixed income: 22.6%
- Real estate: 7.2%
- Alternative investments: 19.3%
- Cash & Other: 2.1%



- According to the U.S. Census Bureau, roughly 6,000 public sector retirement systems exist in the U.S. Some of the 299 state-administered plans and 5,977 locally-administered plans date back to the 19th century and each has evolved independently. **

Collectively, these plans have:

- $3.74 trillion in assets
- 14.7 million active (working) members and 10.3 million retirees
- $282.899 billion in benefit distributions annually

*Based on the latest information from the Public Fund Survey; www.nasra.org/investment
**https://www.census.gov/data/tables/2017/econ/aspp/aspp-historical-tables.html

Public Pension Investments and Governance

HOW SYSTEMS INVEST IS CRITICAL TO MEETING PENSION OBLIGATIONS OVER LONG TERM

"There is no one-size-fits-all approach to investments, but allocation of assets and bottom-line performance ultimately determine plans' fiscal health and the ability to pay for promised retirement benefits. In fact, **experts estimate that investment returns account for 60 percent of pension benefits**."

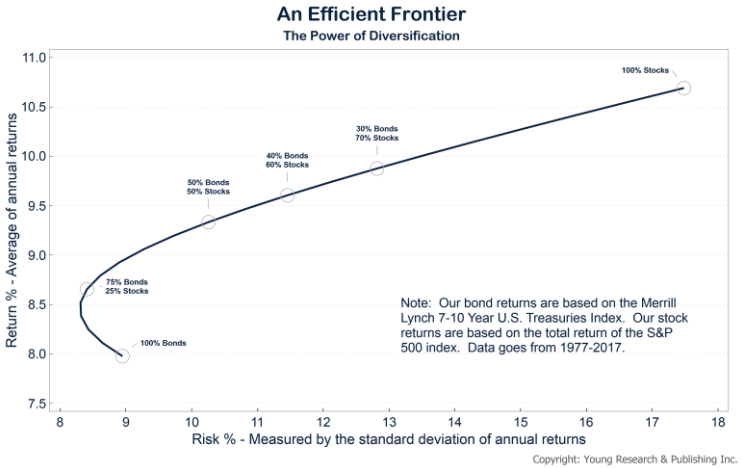
- The Pew Charitable Trusts' public sector retirement systems project performs 50-state and major city research on all aspects of public pension systems, including fiscal health, investment practices, benefits design, and governance. State- and locally run retirement systems currently manage trillions of dollars in public pension fund investments.

THE PEW CHARITABLE TRUSTS

https://www.pewtrusts.org/en/research-and-analysis/articles/2017/04/public-pensions-investments

Traditional Optimal Portfolio: MPT

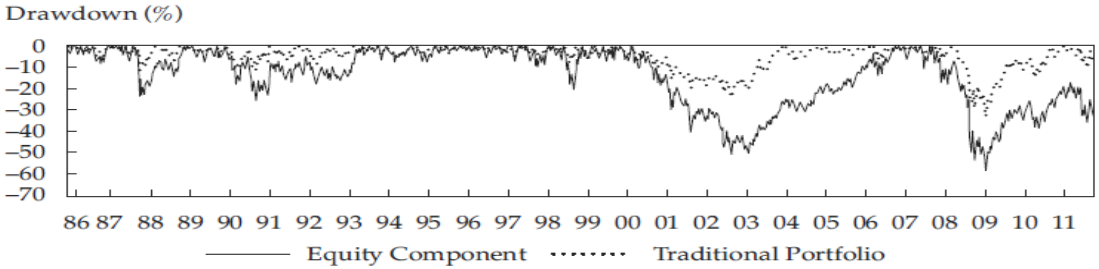
- A Typical Pension Fund*



- A one-bet portfolio:

Stock market goes up, investors win, down, they lose**

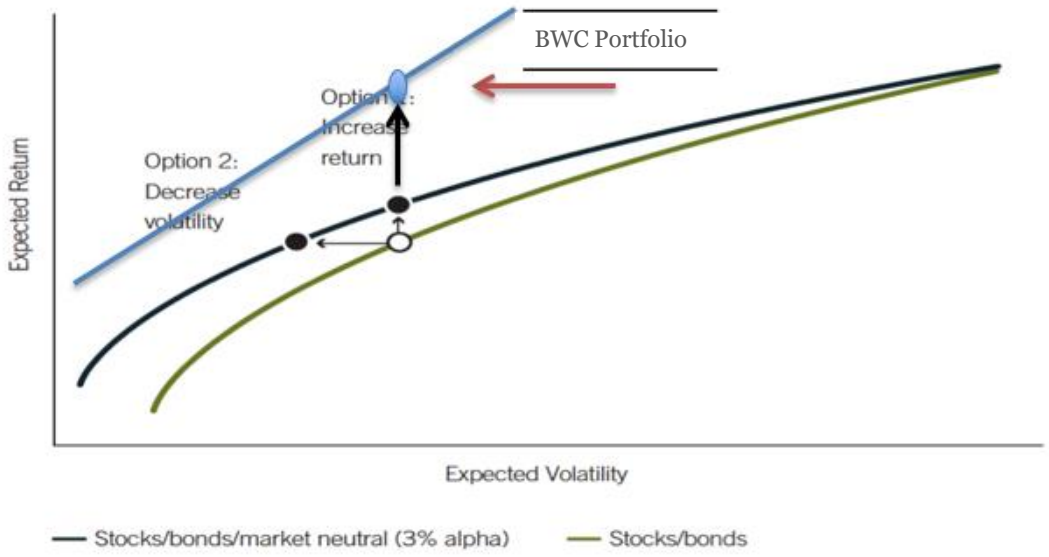
Figure 1. Drawdowns of a Traditional Weight–Balanced Portfolio and Its Equity Component, 1986–2011



*https://www.wesmoss.com/news/what-everybody-ought-to-know-about-asset-allocation/
**http://schultzcollins.com/static/uploads/2014/04/Innovations-in-Asset-Allocation-and-Risk-Management-_-CFA-Institute.pdf

Our Optimal Portfolio: A Living Vehicle

- Is Robust
- Defines Risks Properly
- Risk Management (of Portfolio)
- Correctly Identifies Investment Solutions (definitions)
- Addresses Liquidity
- One which minimizes risk for a given level of expected return



Source: Pyramis Global Advisors

What it Looks Like

Idea Generation

+
-
+
-
+
-

	Liquid	Semi-Liquid	Illiquid
Equity	Passive, Beta, Active Long	L/S Equity	Private Equity
Fixed Income/Credit	HQ, HY	Distressed	Private Debt
Alternatives	Multiple Strategies →		
Flow/Liquid Fund			

Beneficiaries, Costs, and etc.

Dividends, Disbursements, Interest, etc.

Asset Allocation Comparison

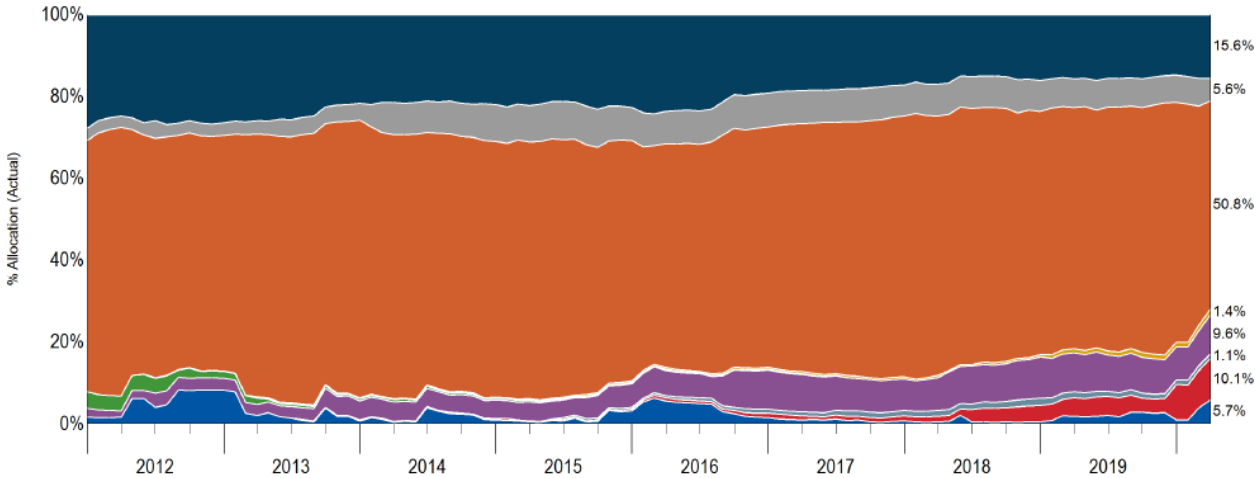
PRIOR - 2012

ASSET CLASS	MAX	TARGET	MIN
FIXED INCOME	**50%**	**28.9%**	**20%**
High Quality	45%	21.3%	20%
High Yield	15%	7.6%	0%
EQUITIES	**70%**	**56.1%**	**40%**
Large Capitalization Growth	30%	15%	10%
Large Capitalization Value	30%	15%	10%
SMID Cap	10%	5%	0%
International	20%	13.6%	7.%
Emerging Markets	15%	7.5%	5%
ALTERNATIVES	**20%**	**10%**	**5%**
Hedge Funds	15%	10%	0%
Real Assets	5%	0%	0%
Private Equity	10%	5%	0%

NEW - 2018

ASSET CLASS	MAX	TARGET	MIN
CREDIT (Beta, Factor, Active)	**65%**	**25%**	**15%**
High Quality	57.5%	15%	7.5%
Multi-Credit	30%	10%	7.5%
EQUITY (Beta, Factor, Active)	**75%**	**55%**	**35%**
Public	75%	43%	35%
Private	12%	5%	0%
Diversified	20%	7%	0%
ALTERNATIVES	**35%**	**20%**	**10%**
Real Estate	20%	12.5%	2%
Commodities	7%	2.5%	0%
Differentiated return streams	15%	%6	0%

Asset Allocation History



24.	26.	25.	26.	26.	25.	22.	21.	21.	21.	21.	22.	22.	21.	23.	22.	23.	23.	19.	19.	18.	18.	17.	17.	17.	15.	15.	16.	15.	15.	15.	14.	15.
2.8	4.3	3.0	3.2	3.3	4.2	4.1	4.1	7.9	7.7	8.1	9.0	9.0	9.3	9.3	8.1	7.9	8.1	8.2	8.2	8.1	8.0	8.1	7.6	7.8	7.7	7.8	7.5	7.0	7.0	7.1	6.7	5.6
65.	58.	57.	57.	64.	65.	63.	67.	64.	61.	62.	62.	62.	63.	59.	58.	54.	55.	58.	58.	60.	61.	62.	63.	63.	62.	61.	59.	59.	59.	59.	58.	50.
--	0.1	0.1	0.1	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.6	1.1	1.1	1.1	1.1	1.4
3.6	3.8	2.4	1.6	1.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	--	--	--	--	--	--	--	--
1.6	3.4	3.0	2.9	2.7	2.9	4.7	4.7	4.9	4.5	4.5	4.5	4.7	4.4	5.5	5.8	6.1	5.8	9.0	9.6	9.2	8.3	8.0	7.7	8.1	9.3	9.2	10.	9.5	8.9	8.8	8.2	9.6
--	--	--	--	--	--	--	--	--	--	--	--	--	0.4	0.5	0.5	0.6	0.8	0.8	0.9	1.0	1.2	1.3	1.4	1.4	1.4	1.6	1.7	1.5	1.3	1.2	1.1	1.1
--	--	--	--	--	--	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.5	0.7	0.7	0.8	1.2	1.0	1.0	1.0	1.3	1.3	3.0	3.5	4.0	4.5	4.6	3.4	8.6	10.
1.5	3.9	8.1	8.2	1.9	1.3	3.7	0.6	0.3	3.9	2.2	0.8	0.4	0.6	0.5	3.0	5.6	4.9	2.4	1.4	0.9	1.1	0.4	0.6	0.4	0.5	0.4	0.4	1.7	2.0	2.8	0.9	5.7

High Quality Credit · Multi-Credit · Public Equity · Private Equity · Diversified Equity · Real Estate · Commodities · Differentiated Return Streams · Cash

Asset Class	2012	2020	% Increase/ Decrease
High Quality Credit	24	15	(38%)
Multi-Credit	2.8	5.6	100%
Public Equity	65	50	(23%)
Private Equity	0.1*	1.4	1300%
Diversified Equity	3.6	0	(100%)
Real Estate	1.6	9.6	500%
Commodities	0.1*	1.1	1000%
Differentiated Return Streams	0.1*	10	9900%
Cash	1.5	5.7	280%

**Actual Allocation = 0, input 0.1 for calculation purposes*

Investorforce – March 31, 2020

Vanguard 2019 Capital Market Assumptions

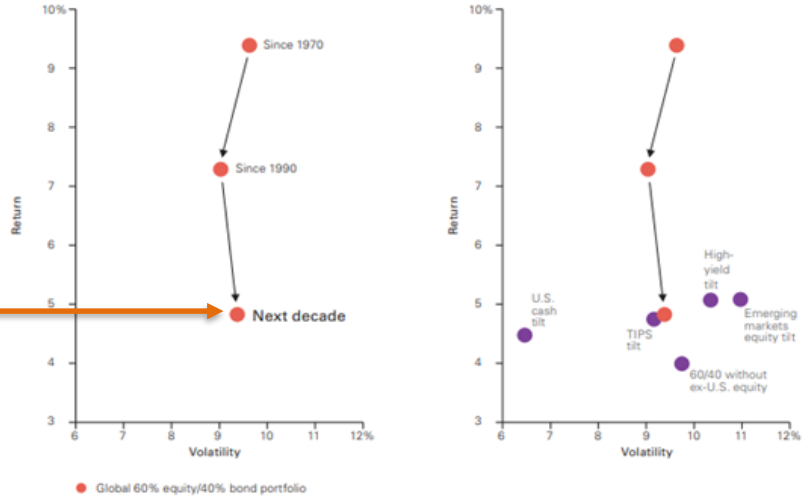
*Projected 10 Year returns for 60/40 portfolio is **4.9%***

FIGURE II-5

Asset allocation for a challenging decade

a. A lower return orbit ...

b. ... that popular "active tilts" will likely fail to escape



c. Projected ten-year annualized nominal returns as of September 2018

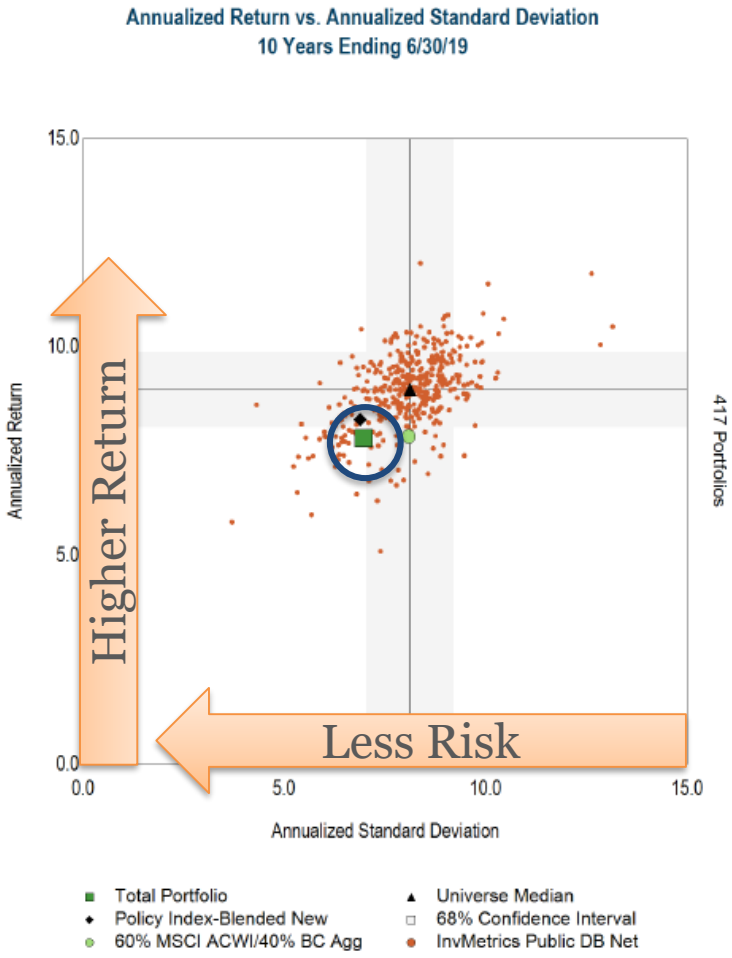
Portfolios		5th percentile	25th percentile	Median	75th percentile	95th percentile	Median volatility
Global balanced portfolios	100% bonds	1.8%	2.7%	3.4%	4.1%	5.1%	4.5%
	20/80 stock/bond	2.3%	3.3%	4.0%	4.7%	5.9%	4.5%
	60/40 stock/bond	1.5%	3.5%	4.9%	6.3%	8.4%	9.4%
	80/20 stock/bond	0.8%	3.4%	5.2%	7.0%	9.7%	12.5%
	100% equity	–0.1%	3.1%	5.3%	7.6%	11.0%	15.8%
Portfolios with common 20% tilts relative to 60/40 stock/bond	**60/40 stock/bond**	**1.5%**	**3.5%**	**4.9%**	**6.3%**	**8.4%**	**9.4%**
	High-yield tilt	1.8%	3.7%	5.1%	6.5%	8.7%	**10.4%**
	Inflation protection tilt	1.4%	3.4%	4.8%	6.2%	8.4%	**9.2%**
	Emerging markets equity tilt	1.4%	3.6%	5.1%	6.6%	8.8%	**11.0%**
	U.S. cash tilt	1.9%	3.4%	4.4%	5.5%	7.1%	**6.4%**
	60/40 without ex-U.S. equity	0.1%	2.5%	4.0%	5.6%	8.1%	**9.8%**

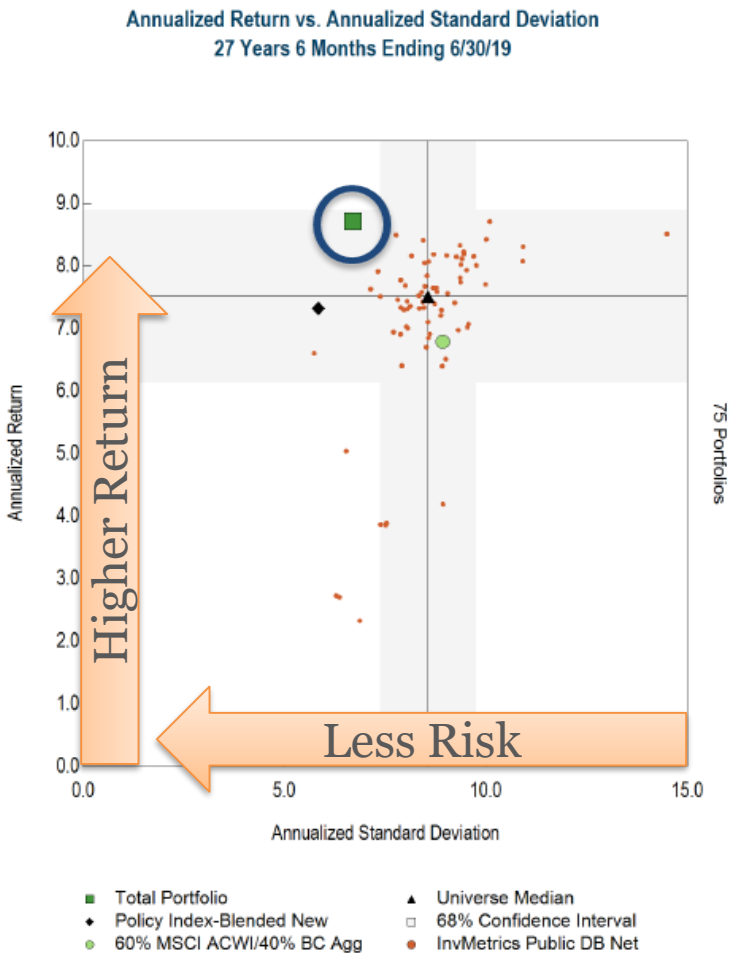
Notes: The figure shows summary statistics of 10,000 VCMM simulations for projected ten-year annualized nominal returns as of September 2018 in USD before costs. Historical returns are computed using indexes defined in "Indexes used in our historical calculations" on page 5. The global equity portfolio is 60% U.S. equity and 40% global ex-U.S. equity. The global bond portfolio is 70% U.S. bonds and 30% global ex-U.S. bonds. Portfolios with tilts include a 20% tilt to the asset specified funded from the fixed income allocation for the fixed income tilts and the equity allocation for the equity tilts.

Source: Vanguard.

https://pressroom.vanguard.com/nonindexed/Research-Vanguard-Economic-and-Market-Outlook-2019-120618.pdf

Minimizing Risk – City of Bristol





Investorforce – June 30, 2019

External Management Fees as a Percentage of Assets

"External Management Fees as a Percentage of Assets increased by around 30% from 2006 to 2016."*

Asset Class	CalPERS**	Bristol	Difference
Public Equities	0.61%	0.61%	-
Fixed Income	0.30%	0.28%	6.31%
Alternatives	1.40%	1.25%	10.56%
Total	**1.14%**	**0.75%**	**34.21%**

Low Cost Portfolio	60 ACWI/ 40 AGG	60 Vanguard Total Market/40 AGG
Public Equities	0.31%	0.04%
Fixed Income	0.05%	0.05%
Total	**0.21%**	**0.04%**

*https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2018/09/state-public-pension-funds--investment-practices-and--performance-2016-data-update
**CalPERs

Cash Flow – Advantage of Derisking Portfolio

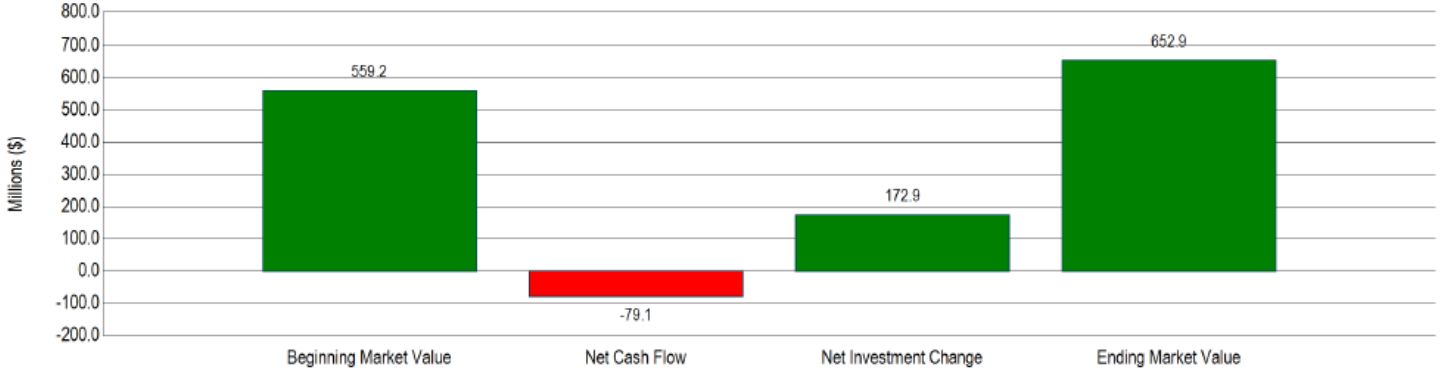
Policy Index-Blended New

	Three Years
Beginning Market Value	$559,171,273
Net Cash Flow	-$79,135,674
Net Investment Change	$172,893,236
Ending Market Value	$652,928,835
Market Experience	$636,981,493
Surplus/Deficit	$15,947,342

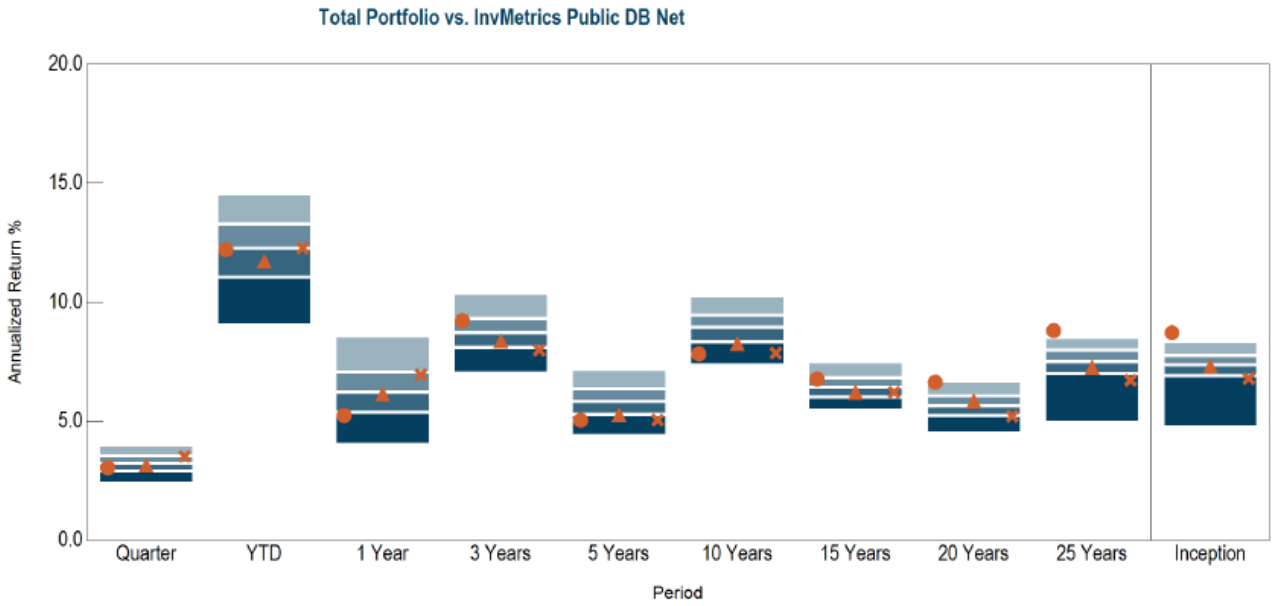
60% MSCI ACWI/40% BC Agg

	Three Years
Beginning Market Value	$559,171,273
Net Cash Flow	-$79,135,674
Net Investment Change	$172,893,236
Ending Market Value	$652,928,835
Market Experience	$628,840,497
Surplus/Deficit	$24,088,338

From 7/01/16 To 6/30/19



BWC Performance Rankings



	Return (Rank)																							
5th Percentile	3.99		14.55		8.57		10.36		7.19		10.27		7.49		6.68		8.50		8.35	
25th Percentile	3.57		13.30		7.09		9.33		6.37		9.47		6.83		6.08		8.00		7.77	
Median	3.23		12.29		6.24		8.73		5.84		8.97		6.45		5.66		7.51		7.39	
75th Percentile	2.91		11.07		5.40		8.11		5.30		8.35		6.04		5.26		7.01		6.93	
95th Percentile	2.41		9.05		4.03		7.03		4.40		7.38		5.48		4.52		4.96		4.78	
# of Portfolios	535		534		527		514		472		396		270		164		94		75	
● **Total Portfolio**	3.05	(65)	12.21	(53)	5.24	(80)	9.22	(29)	5.04	(84)	7.82	(90)	6.77	(29)	6.64	(7)	8.81	(3)	8.71	(2)
▲ **Policy Index-Blended New**	3.16	(57)	11.74	(63)	6.15	(54)	8.38	(64)	5.28	(76)	8.27	(80)	6.24	(65)	5.87	(39)	7.26	(63)	7.32	(54)
× **60% MSCI ACWI/40% BC Agg**	3.52	(30)	12.27	(51)	6.96	(29)	7.98	(80)	5.05	(83)	7.86	(89)	6.22	(66)	5.20	(78)	6.72	(82)	6.79	(81)

Investorforce – June 30, 2019

Total Portfolio Risk Statistics

Value Creation *Market Risk* *Return For Risk*

3 Years Ending 6/30/19

	Annualized Return (%)	Annualized Standard Deviation	Annualized Alpha (%)	Beta	Tracking Error	Up Market Capture Ratio (%)	Down Market Capture Ratio (%)	Sharpe Ratio	Information Ratio
Total Portfolio	9.22	7.37	0.85	1.05	1.44	111.06	101.03	1.06	0.86
60% MSCI ACWI/40% BC Agg	7.98	6.90	0.00	1.00	0.00	100.00	100.00	0.95	--
InvMetrics Public DB Net Median	8.73	7.31	0.59	1.04	2.02	104.82	97.10	1.02	0.41

5 Years Ending 6/30/19

	Annualized Return (%)	Annualized Standard Deviation	Annualized Alpha (%)	Beta	Tracking Error	Up Market Capture Ratio (%)	Down Market Capture Ratio (%)	Sharpe Ratio	Information Ratio
Total Portfolio	5.04	7.50	-0.13	1.02	1.73	103.79	104.03	0.56	-0.01
60% MSCI ACWI/40% BC Agg	5.05	7.14	0.00	1.00	0.00	100.00	100.00	0.59	--
InvMetrics Public DB Net Median	5.84	7.35	1.02	1.00	2.09	104.03	93.25	0.71	0.41

10 Years Ending 6/30/19

	Annualized Return (%)	Annualized Standard Deviation	Annualized Alpha (%)	Beta	Tracking Error	Up Market Capture Ratio (%)	Down Market Capture Ratio (%)	Sharpe Ratio	Information Ratio
Total Portfolio	7.82	6.97	2.15	0.72	4.42	73.28	76.60	1.05	-0.01
60% MSCI ACWI/40% BC Agg	7.86	8.08	0.00	1.00	0.00	100.00	100.00	0.91	--
InvMetrics Public DB Net Median	8.97	8.12	1.41	0.97	2.41	107.92	94.86	1.05	0.46

Investorforce – June 30, 2019

Questions?

Disclosures

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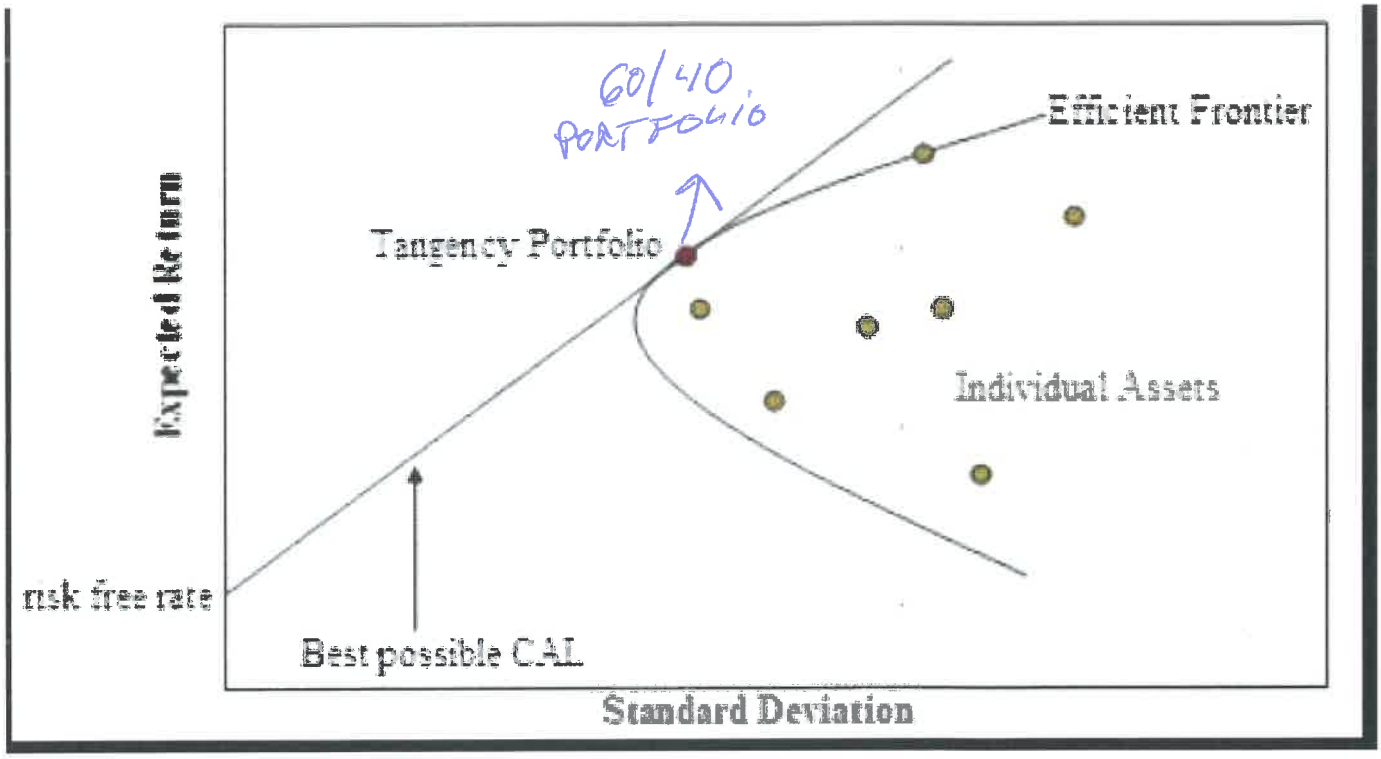
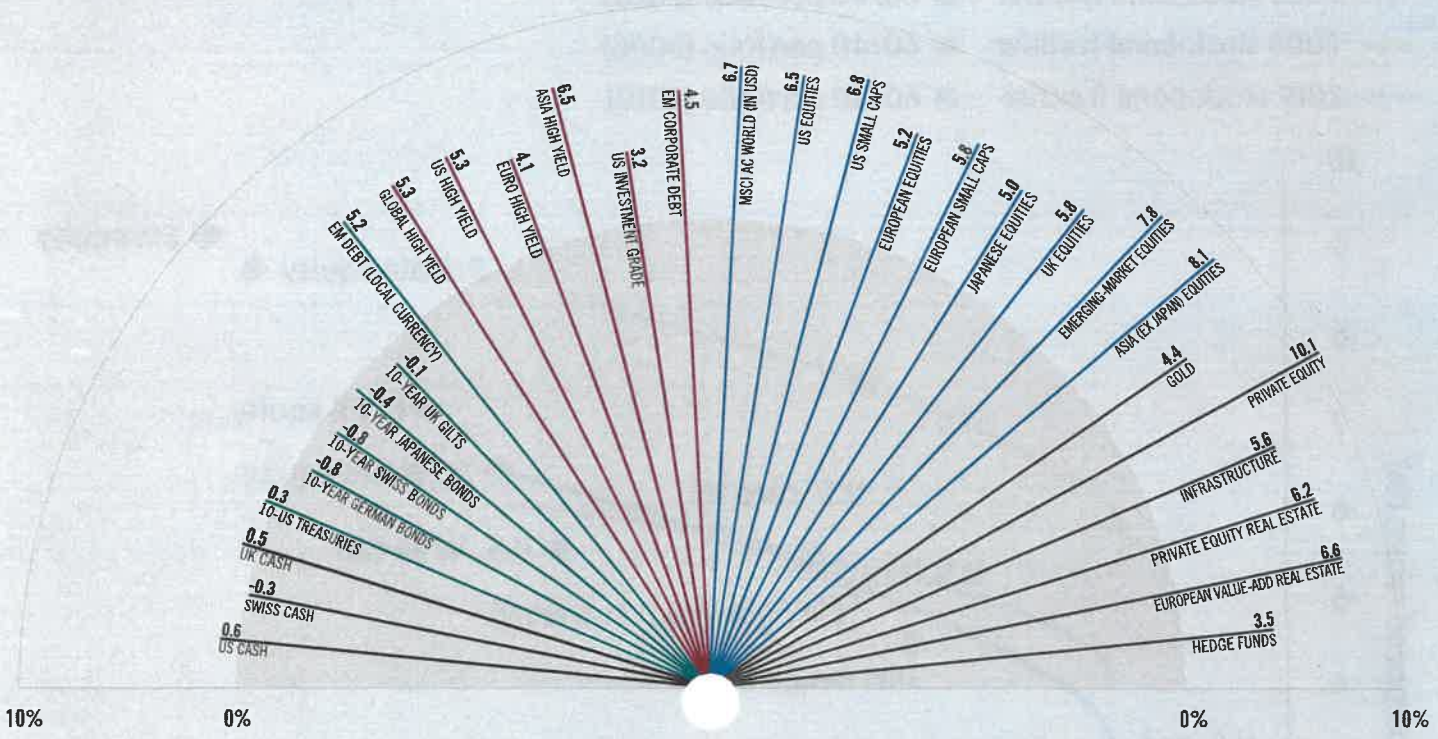

60/40
PORTFOLIO
Efficient Frontier
Tangency Portfolio
Individual Assets
Expected Return
risk free rate
Best possible CAL
Standard Deviation

HORIZON

RETURN EXPECTATIONS FOR THE NEXT 10 YEARS
NEW APPROACHES TO INVESTING



CASH | GOVERNMENT BONDS | CORPORATE BONDS | EQUITIES | ALTERNATIVES AND GOLD

TEN ESSENTIAL MESSAGES

Secular outlook and trends

1 **Return expectations swayed by pandemic.**
The severe pressure that risk assets came under as covid-19 spread across the world, together with structural changes to the global economy and the distortions caused by policy responses to the pandemic, are all leading us to alter our long-term return expectations across a range of assets, including cash, bonds and equities.

2 **Long-term growth factors to the fore again.**
The coronavirus pandemic alters the trajectory for the global economy, which should rebound strongly in 2021 after contracting in 2020. China should recover relatively quickly and move back to its lower long-term growth equilibrium as internal structural changes continue. A slight pick-up in productivity growth driven by technology means we are more bullish on the long- and medium-term prospects for the US economy than US official institutions. The US should cement its growth advantage over Europe.

3 **A 'debt dominance' monetary policy regime.**
Covid-19 will accelerate a number of long-term trends, such as the rise of the virtual economy and the growing concentration of value creation. It will also hasten the move to new approaches to economic policy, with unorthodox policy making ensuring that interest rates remain low for a long time.

4 **Rising populism threatens forecasts.**
Our central scenario is that we will remain in a mild innovation-driven growth regime that will be prolonged by increased central bank activism. Our negative scenario captures the risk that various forms of populism end up benefiting from the coronavirus pandemic, threatening GDP growth over the long term.

Expected returns

5 **Cash is no longer king.**
Our analysis came to the same conclusion in previous years, but our belief that we will see a period of financial repression to keep borrowing costs low for governments and companies alike means that we estimate that real average annual returns will be negative for cash in Swiss francs and euros over the next 10 years, while US cash will offer a paltry 0.6%. Investors will need to consider other liquid alternatives to improve prospects in a prolonged period of rock-bottom interest rates.

6 **Equity returns to increase.**
Mechanically, taking as a starting point a year like 2020, when earnings will decline significantly as a result of the coronavirus, results in a rise in our 10-year return expectations for equities compared to our initial calculations. The persistence of low bond yields will likely prolong equities' appeal. However, the fallout from the covid-19 outbreak could mean that equity income in the form of dividends declines.

7 **Negative returns for sovereign bonds, better prospects for high yield.**
Prolonged downward pressure on interest rates will mean that 'core' government bonds will deliver paltry or even negative average annual returns over the next 10 years. Persistently low rates mean that core bonds will provide scant protection against even a slight rise in inflation. Their safe-haven status may even come into question. While the feeble outlook for government bonds will affect investment-grade returns, long-term return expectations for high-yield bonds, which have more equity-like features, look like improving as a result of recent events. The expected returns from emerging-market debt also look correspondingly more attractive for investors willing to tolerate the risk.

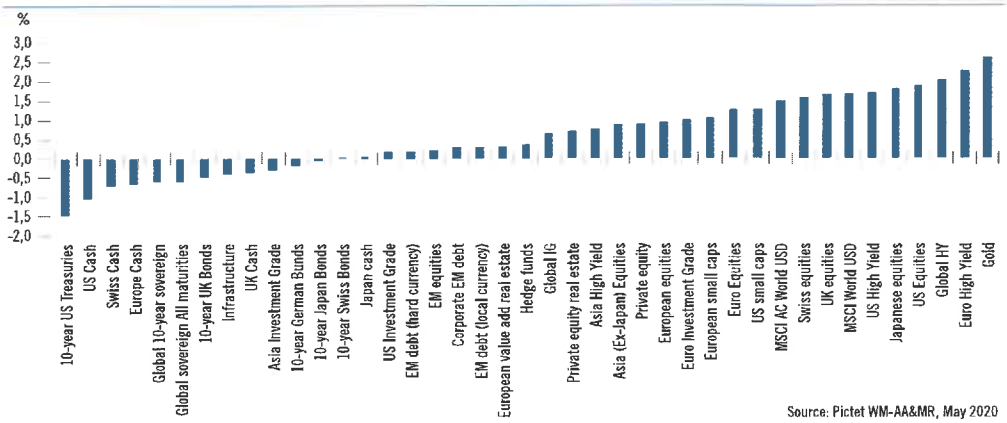
8 **The case for accepting the illiquidity premium.**
Against a backdrop of diminishing returns for traditional asset classes like bonds and cash, investors will continue to be attracted to alternatives capable of boosting the prospects of a diversified portfolio. We believe the pandemic opens up new avenues for assets with long lock-up periods like private equity, which could achieve double-digit annual returns on average over the next 10 years.

Asset allocation

9 **Higher volatility ahead**
Investors will have to become used to much higher volatility in the coming years, with an increase in the frequency and magnitude of temporary drawdowns. As a result, diversification and selectivity must remain paramount in investors' considerations and they will need to refine their approach to risk tolerance. We see behavioural finance growing further in relevance in efforts to improve portfolio returns.

10 **The endowment approach maintains its allure.**
The diminished potential of traditional 60/40 portfolios (60% equities and 40% bonds) because of fading returns from bonds will increase the urgency to find alternative approaches to strategic asset allocation. We believe that carefully calibrated endowment-style investing, which incorporates hefty exposure to private equity, real assets and absolute-return strategies, has the potential to boost long-term returns.

CHART 2: CHANGES IN OUR 10-YEAR EXPECTED RETURNS AS A RESULT OF COVID-19 (MAY 2020 VS. MARCH 2020)



Source: Pictet WM-AA&MR, May 2020

"The pandemic has increased the appeal of the endowment approach to investing"

Financial markets and asset allocation

Following the pandemic, we can expect some of the economic trends and changes in monetary and fiscal policy style that we identified and wrote about in previous editions of *Horizon* to accelerate.

1. Economists and strategists argue about the fundamental factors that have hastened the general decline in interest rates to close to or below zero since the appearance of the coronavirus. Nevertheless, it is reasonable to think that the turn in central banks' monetary styles is one factor. We see central banks tending to adopt a style that combines yield curve control and Modern Monetary Theory (MMT). In short, **central banks will be financing government deficits while setting their financing costs at levels significantly below nominal growth.**

2. As a result, with the Federal Reserve already holding 26% of all government bonds issued by the US Treasury, **bond market mechanisms are being dislocated with the risk that 'core' sovereign bonds lose their safe-haven status.**

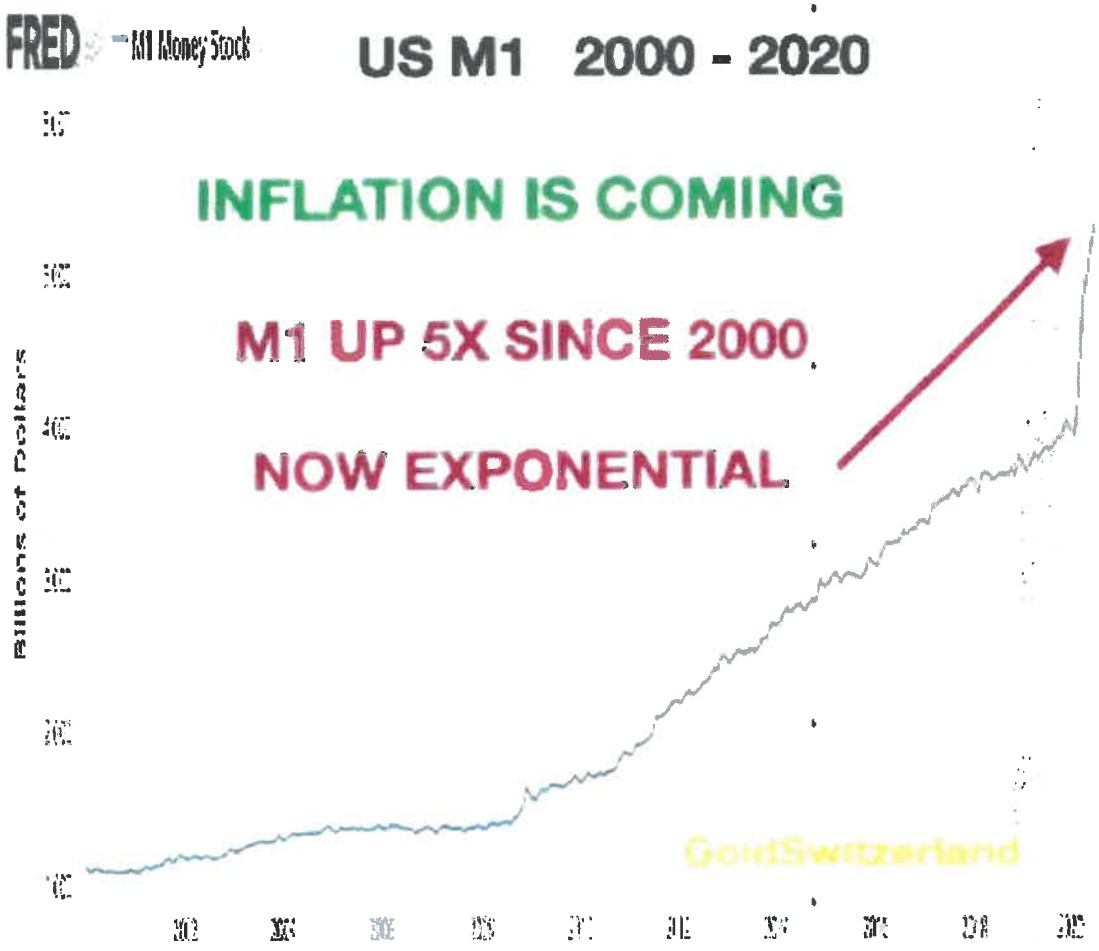
3. The very low returns on core sovereign bonds are leading to capital erosion in real terms (financial repression) **and making it increasingly difficult to create a well-diversified portfolio through a balanced strategic asset allocation.**

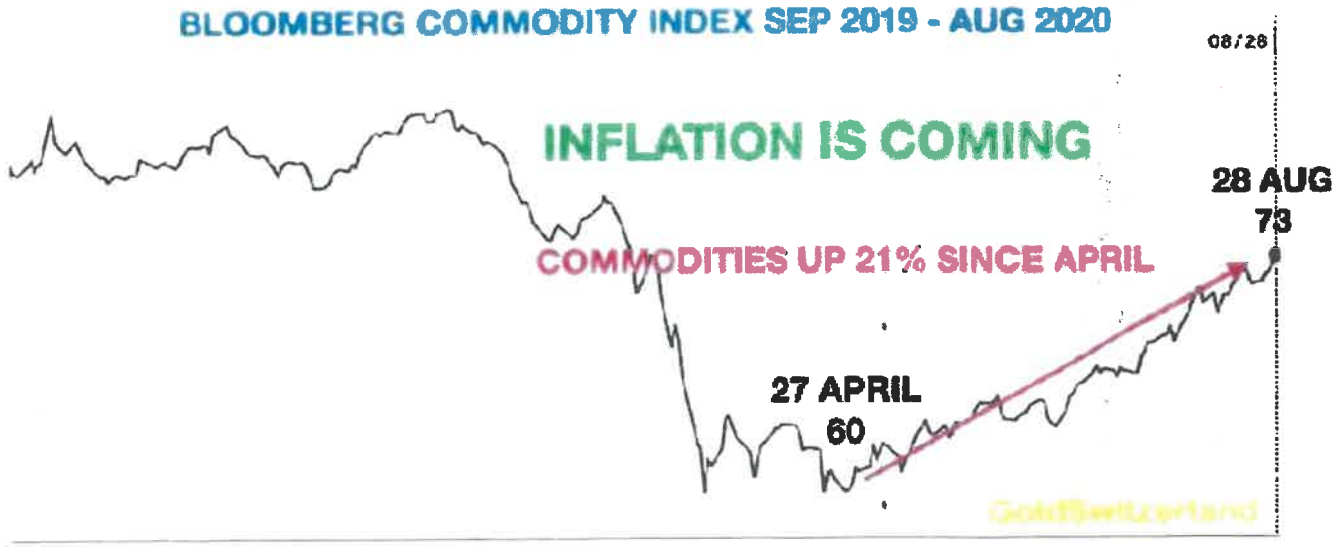
4. We have previously argued that **'cash is no longer king'** when it comes to strategic asset allocation. The kind of MMT + yield curve control being adopted by central banks supports this argument.

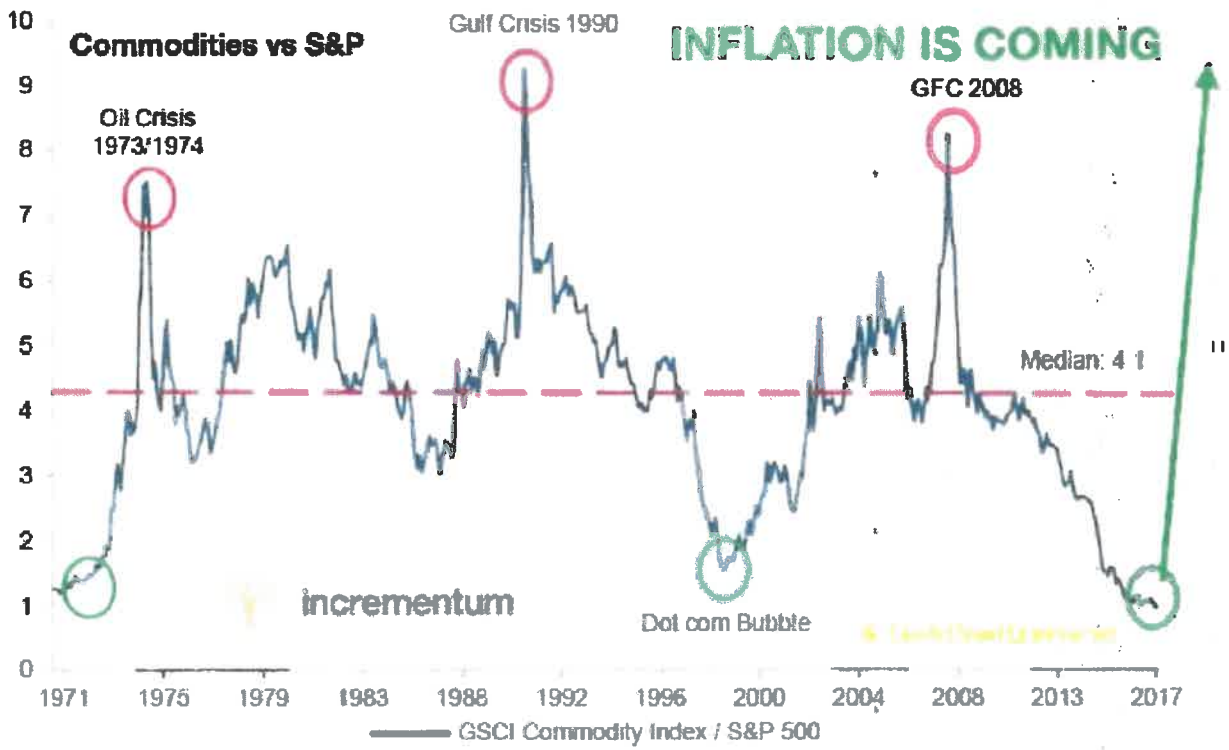
5. **The classic 60/40 strategic asset allocation (60% equities, 40% core government bonds) is losing its lustre** due to the growing cost of diversification brought about by increasingly negative real returns on government bonds. By contrast, the appeal of the endowment style, which makes significant allocations to alternative assets (private equity, real assets, absolute-return strategies), is growing as a result of the pandemic.

6. However, **the worrying rise in debt levels raises the issue of debt sustainability.** The need for selectivity is becoming increasingly acute. Private equity firms' access to financing at a reasonable cost and their resilience to economic shocks must increasingly be part of the equation when selecting deals.

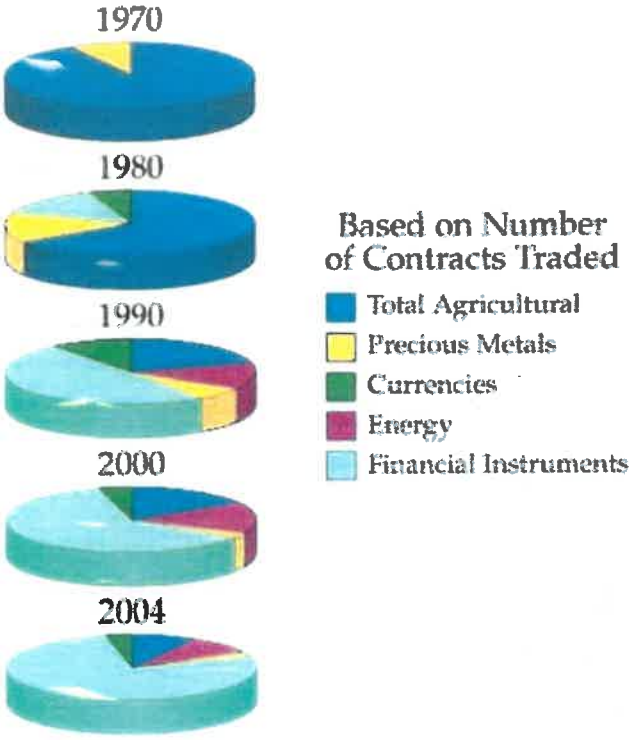
In brief, after the coronavirus crisis, the key words in strategic asset allocation are now more than ever diversification and selection.


FRED
M1 Money Stock
US M1 2000 - 2020
INFLATION IS COMING
M1 UP 5X SINCE 2000
NOW EXPONENTIAL
Billions of Dollars
GoldSwitzerland


BLOOMBERG COMMODITY INDEX SEP 2019 - AUG 2020
08/28
INFLATION IS COMING
28 AUG
73
COMMODITIES UP 21% SINCE APRIL
27 APRIL
60
GoldSwitzerland


Commodities vs S&P
Gulf Crisis 1990
INFLATION IS COMING
GFC 2008
Oil Crisis
1973/1974
Median: 4.1
incrementum
Dot com Bubble
10
9
8
7
6
5
4
3
2
1
0
1971
1975
1979
1983
1988
1992
1996
2000
2004
2008
2013
2017
GSCI Commodity Index / S&P 500

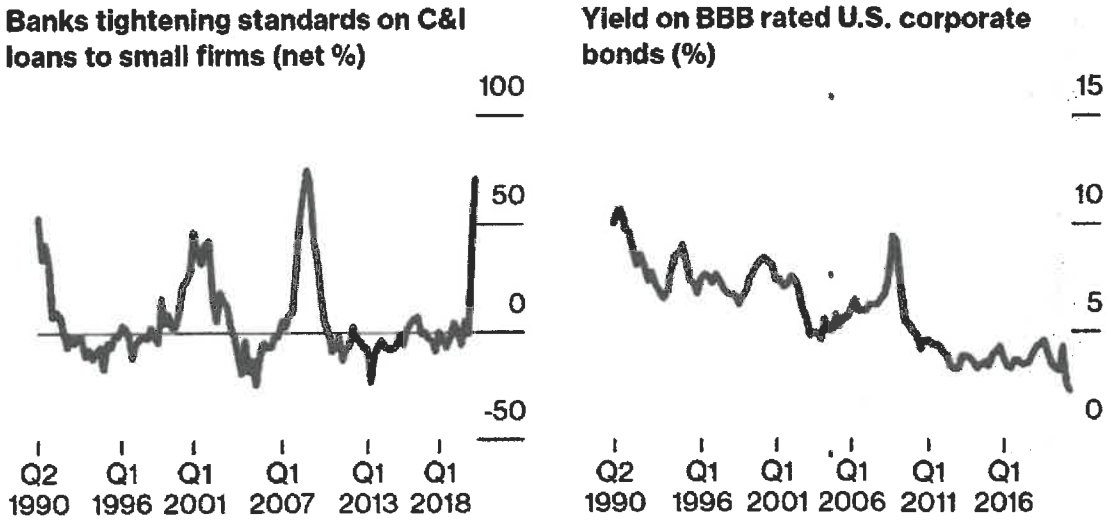
How Financialization has Changed the Composition of Futures Trading



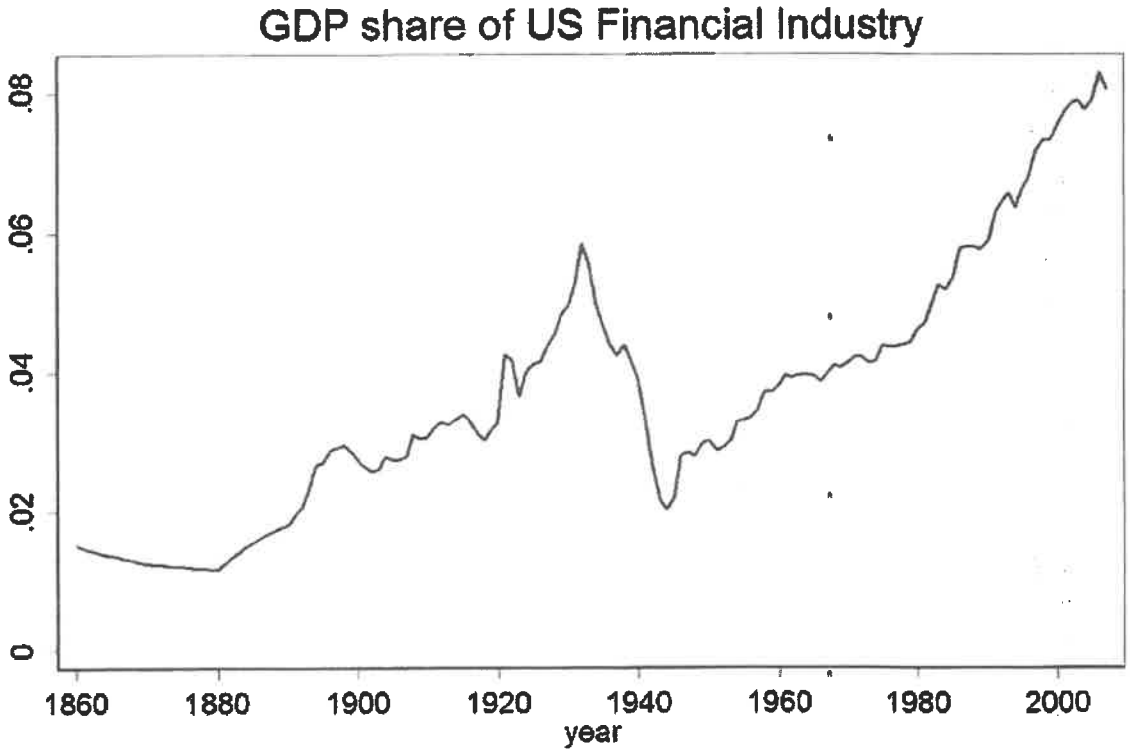
Source:
Commodity Futures Trading Commission, Annual Reports, data appendices, "Futures Statistics by Major Commodity Group"

Worst of Times, Best of Times

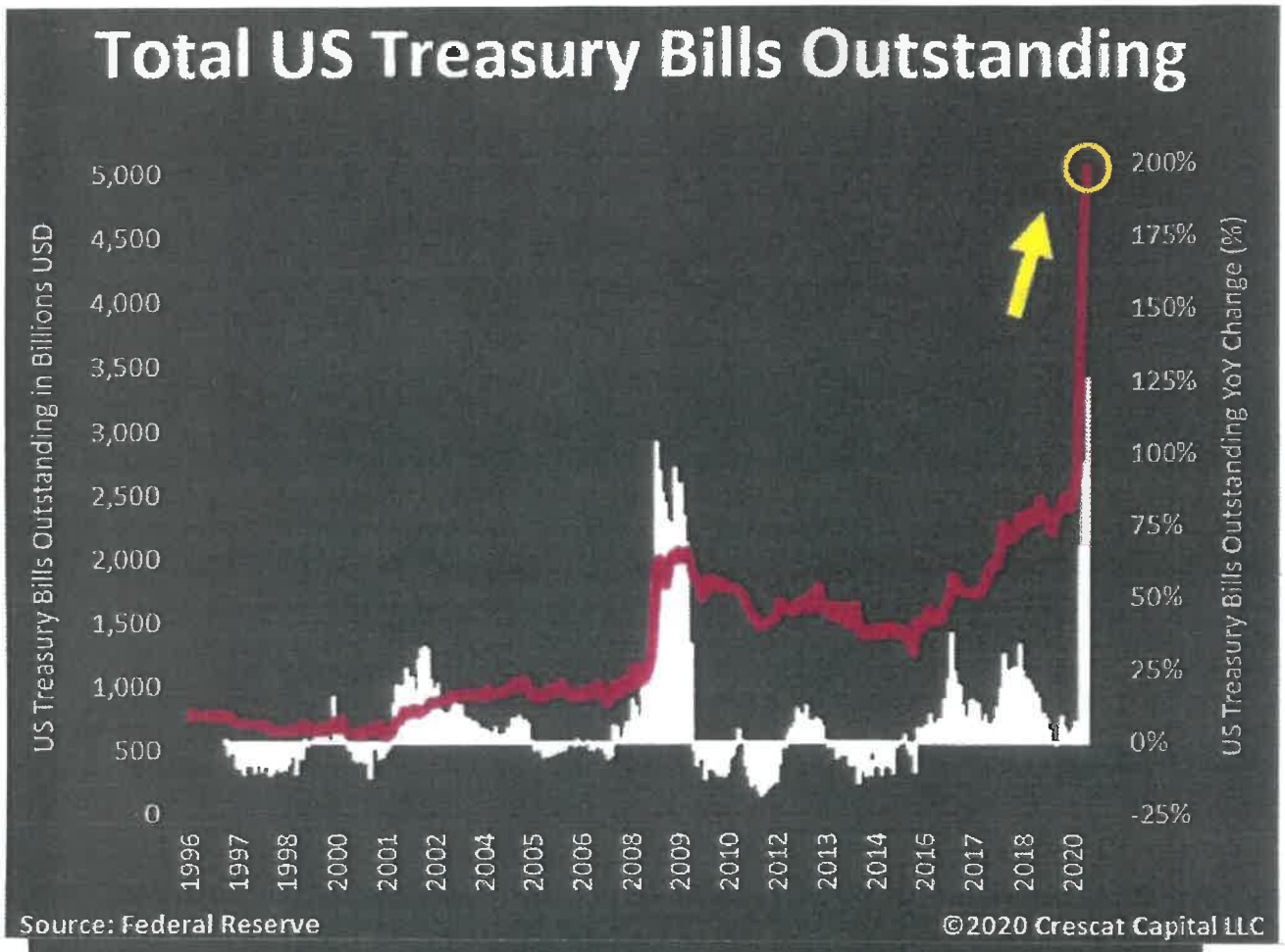
Loans tightest since 2008 as bond markets turn cheapest on record



Source: Federal Reserve, Bloomberg Barclays indices
Note: 3Q BBB yield as of 8/11



Source: Philippon, 2008


Total US Treasury Bills Outstanding
US Treasury Bills Outstanding in Billions USD
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
US Treasury Bills Outstanding YoY Change (%)
200%
175%
150%
125%
100%
75%
50%
25%
0%
-25%
1996
1997
1998
2000
2001
2002
2004
2005
2006
2008
2009
2010
2012
2013
2014
2016
2017
2018
2020
Source: Federal Reserve
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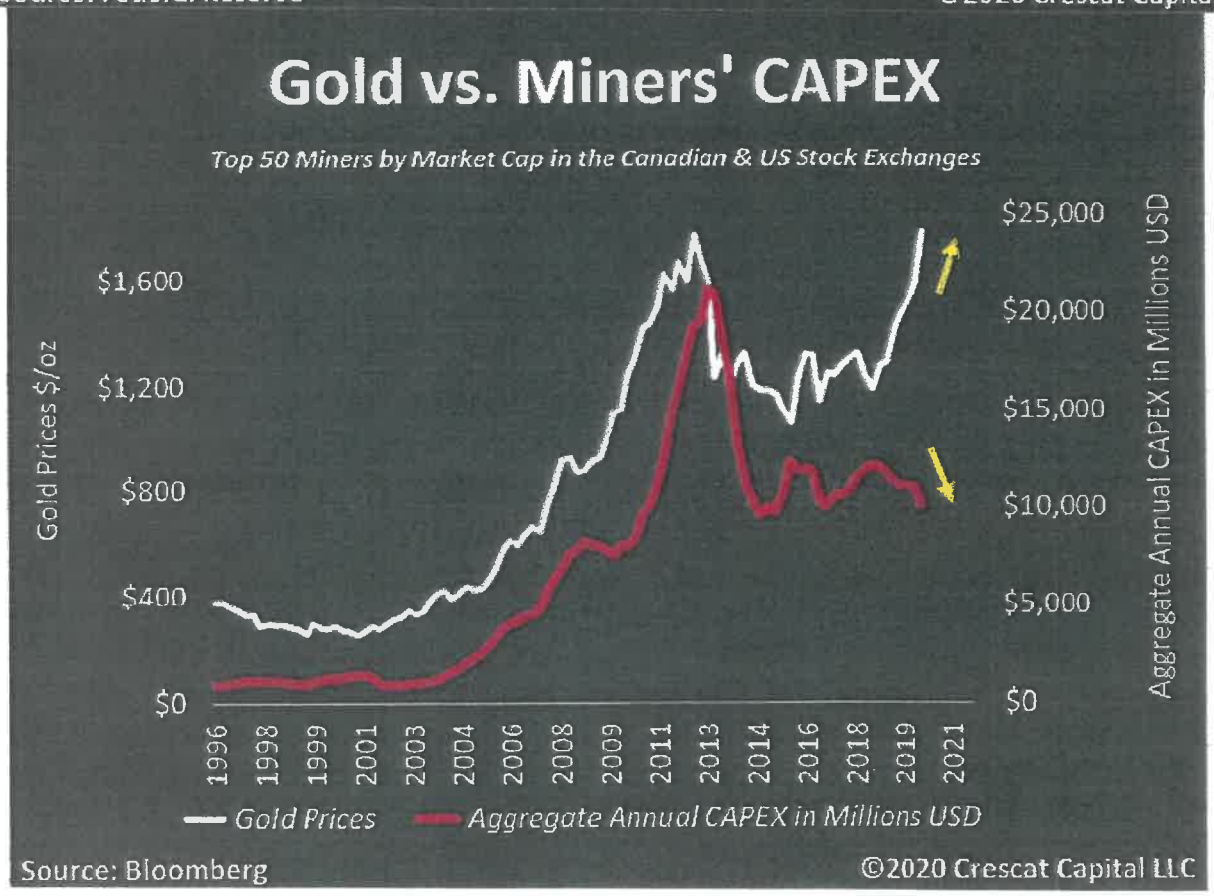
Gold vs. Miners' CAPEX
Top 50 Miners by Market Cap in the Canadian & US Stock Exchanges
Gold Prices $/oz
$1,600
$1,200
$800
$400
$0
Aggregate Annual CAPEX in Millions USD
$25,000
$20,000
$15,000
$10,000
$5,000
$0
1996
1998
1999
2001
2003
2004
2006
2008
2009
2011
2013
2014
2016
2018
2019
2021
Gold Prices
Aggregate Annual CAPEX in Millions USD
Source: Bloomberg
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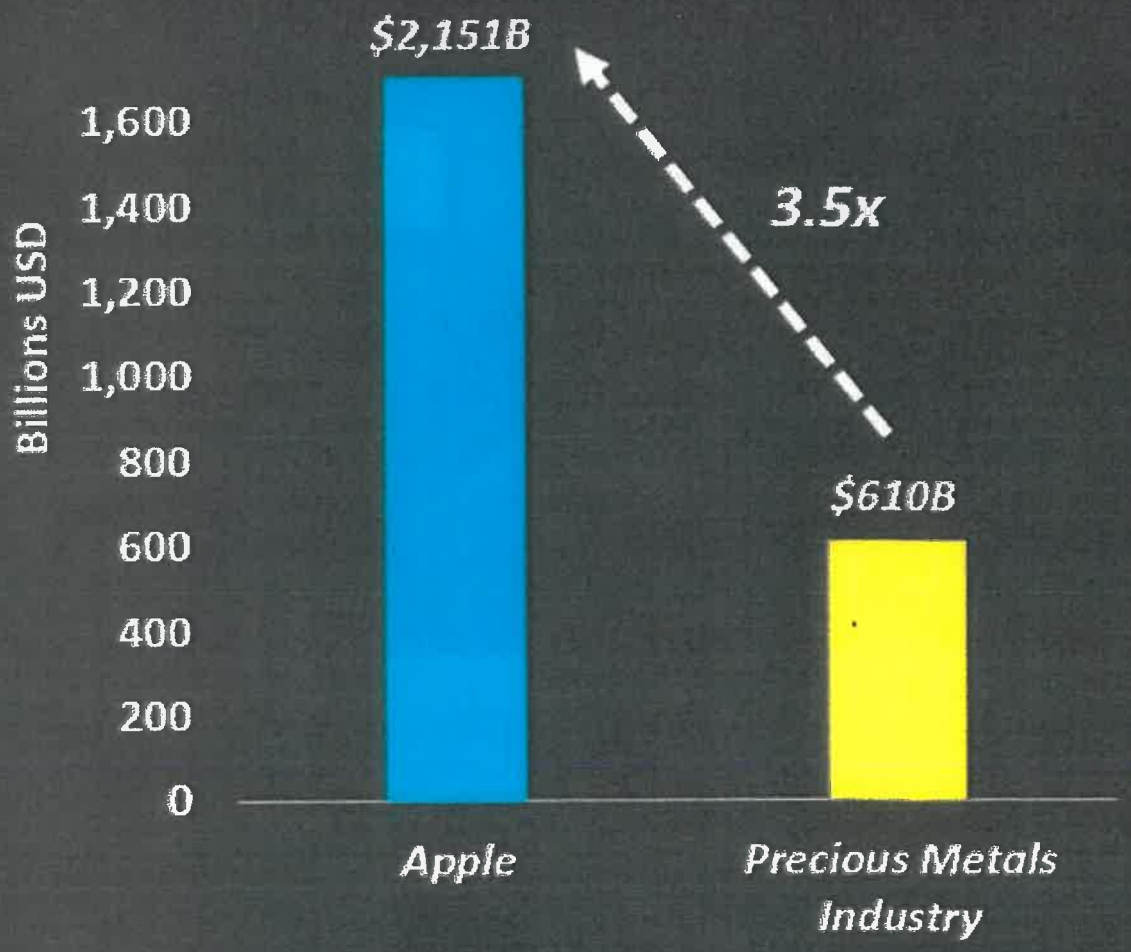
Total Market Cap



Global Synchronized Debasement

Gold vs. Fiat Currencies